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EXECUTIVE SUMMARY

Designing Effective Groundwater Sustainability Agencies:

CRITERIA FOR EVALUATION OF LOCAL GOVERNANCE OPTIONS

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With the passage of the Sustainable Groundwater Management Act (SGMA) in 2014, California took a historic step towards managing the state's groundwater resources. SGMA adopts a state policy of managing groundwater resources "sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses." Although these ambitious goals are critical to California's future water security and sustainablility, major questions remain about how to achieve them.

Designing institutions for sustainable groundwater management is one of the most pressing challenges for SGMA implementation.

Local entities in medium- and high-priority basins must establish Groundwater Sustainability Agencies (GSAs) by June 2017. GSA design and structure will play a critical role in meeting the sustainability goals required by SGMA. Because designing new institutions for good governance is not easy, the need for information and guidance is acute.

SGMA leaves great latitude for local decision making. Primary responsibility for groundwater governance lies with GSAs, to be established by local entities in groundwater basins or sub-basins. SGMA does not specify the details for institutional design of GSAs, nor what specific governance actions must be taken to achieve sustainable groundwater management. Instead, the legislation provides an array of regulatory and non-regulatory tools—mostly optional—from which GSAs can choose. Those tools, in addition to existing authorities already available to local agencies, will provide the basis for groundwater governance in each basin. The relatively short timeline for GSA formation requires local governments and other stakeholders to analyze available options and decide, quickly, how to form novel agencies. These agencies should be armed with the tools necessary to meet current and future groundwater challenges.

While no governance solution is ever perfect, GSAs will have a greater chance of governing fairly and effectively if their design anticipates some common challenges of shared resource governance.

The primary purpose of this document is to assist stakeholders and decision makers in evaluating the design of GSAs. It aims to empower them to think critically about whether proposed GSAs will meet their needs now and in the future, and—if not—which tools may help to achieve these goals. The framework presented here draws on experience in other natural resource management contexts and on research on governance and institutional design to provide lessons learned and illustrative examples.

We propose that local agencies and participating stakeholders use nine criteria to evaluate newly forming GSAs (Figure 1). These are: ***scale***, ***human capacity***, ***funding***, ***authority***, ***independence***, ***participation***, ***representation***, ***accountability***, and ***transparency***. We group these criteria into two general categories: criteria most closely tied to the efficacy of a GSA, and criteria that primarily bear on the fairness of its decisions.

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The criteria we define are inter-related, overlapping, and mutually supportive. They should help those involved in GSA formation and development to think proactively and design more effective organizations.

Efficacy is the ability of a GSA to achieve its goals in the face of inevitable challenges. In order to achieve efficacy, GSAs will need to address the following five criteria.

- *Scale* is the geographic extent of a GSA's jurisdiction relative to the resource being managed. Ideally, the scale of governance would reflect the natural resource itself. Where jurisdictional and resource boundaries do not align, GSAs will need to think carefully about coordination among multiple entities.

- *Human capacity* is the ability to successfully carry out tasks that enable a GSA to achieve its mission. Human capacity is a product of the people who work for or with a GSA, their expertise in groundwater management, and the resources they bring to bear. Managing groundwater requires a wide variety of skills and capabilities, ranging from monitoring and modeling to legal analysis to community outreach and enforcement. GSAs should carefully consider the capabilities they will need to perform necessary functions and ensure they are able to draw upon sufficient resources. Human capacity can come either directly from staff or by accessing reliable external resources.

- *Funding* is financial resources for capital expenditures such as acquisition of land, facilities, or water rights, as well as ongoing expenditures such as salaries, facility operations and maintenance, and other costs. A GSA should consider whether it will have adequate funding to carry out all aspects of its mandate throughout its life cycle. GSAs should ensure they will have sufficient authority to raise additional funds in a fair manner as they become necessary.

- *Authority* is power delegated by the state and accepted by a GSA that enables the GSA to execute the tasks necessary to carry out its mission. Authorities will include those already in place in addition to new ones granted by SGMA. GSAs will need to exercise authority consistent with the challenge of implementing and enforcing an effective groundwater sustainability program.

- *Independence* is the ability of a GSA to operate freely within its defined purview, protected from external pressures that could divert the GSA from achieving its fundamental goals. Independence includes the ability of a GSA to make decisions that support sustainable groundwater management, even when those decisions are costly or unpopular.

Fairness is the GSA's ability to perform its actions in a manner that is both distributionally and procedurally equitable.

Distributional equity refers to the benefits and costs of groundwater management. Procedural equity refers to fair mechanisms for decision making. SGMA does not clearly define how costs and benefits should be distributed, either within a basin or between basins, nor does it specify components for procedural fairness. Fairness matters not only for its own sake, but also because a GSA that operates unfairly is unlikely to retain the stakeholder support necessary to carry out its mission.[8] Therefore, GSAs should address the following four criteria to design institutions that can achieve sustainability with fairness.

It is crucial to understand that while we discuss these criteria as primarily focusing on fairness, they all impact the durability of decisions, reduce conflict, and ease implementation, and as such contribute strongly to efficacy as well as fairness.

- *Participation* is direct, meaningful stakeholder engagement in the decision making process. Local governments should develop effective mechanisms for substantive participation by a broad stakeholder base during GSA formation, as well as during subsequent planning and implementation phases. Specific mechanisms and support may be needed to ensure that residents from disadvantaged communities can meaningfully engage.

- *Representation* is when elected or appointed leaders bring the interests of stakeholders into a GSA's decision making process. Representation is complementary to participation, offering an additional indirect pathway of engagement. Fair representation gives voice to people with a diversity of interests likely to be affected by a GSAs decisions. Procedures for election or appointment of representatives should be carefully scrutinized, as should decision making processes, conflict of interest rules and other elements of governance.

- *Accountability* is when GSAs are held responsible for their decisions and actions, and are answerable for their results, including whether or not groundwater sustainability plans (GSPs) are effectively implemented. GSAs will be accountable to both communities they represent and to the state. GSAs will be formed from local public agencies whose governing boards are subject to local public elections. State oversight will play an important role in achieving accountability, but monitoring and enforcement activities by GSAs themselves will also be critical.

- *Transparency* is operating openly and accessibly, such that stakeholders and agencies with responsibility for oversight can effectively observe, understand, and weigh in on the actions a GSA is taking, its process for decision making, and its progress toward meeting sustainability goals.

SGMA is more than a novel experience for California.

It is a grand experiment in the design of institutions for groundwater governance. Arguably, implementation of SGMA has the potential to transform the state from having a system of groundwater management that is among the most deficient in the country to having a set of locally inclusive governance systems that will achieve long-term groundwater sustainability. The consequences of poor design choices for GSAs – choices that aren't optimal for a particular jurisdiction, or result in undesirable outcomes – could be severe. Some problems may not become apparent before substantial and irreversible harm is done, or before it is exceedingly difficult to course correct. Therefore, for the long-term success of SGMA, stakeholders and decision makers need to think carefully now about what factors contribute to good governance, and how to incorporate those factors into new institutions (Table 1).

Figure 1: Governance criteria. A successful path to groundwater sustainability will require governance that is both fair and effective. GSAs will need to carefully consider the criteria shown here in their institutional design, each of which is necessary to achieve both fairness and efficacy in groundwater management.

The full report is available online at
www.law.berkeley.edu/groundwater-governance-criteria

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Table 1: Evaluating GSA governance: Basic questions about GSA governance follow from the nine criteria in this document.	
Scale	• How do the boundaries of the GSA (or coordinated GSAs) compare to the boundaries of the groundwater basin or subbasin? • What plans are in place to deal with any gaps in coverage, aquifers shared with other GSAs, or overlap with other related entities? • What plans are in place to address connections between groundwater and surface water? • How will the GSA and GSP coordinate with land use planning and regulatory agencies within and outside the basin on issues like well permitting and aquifer recharge? • What mechanisms will ensure effective coordination with neighboring GSAs?
Human capacity	• What skills and expertise will be required during the GSA formation, GSP development, and GSP implementation phases defined in this report? • Will these capacities exist in the proposed GSA? If not, how will these capacities be developed or accessed?
Funding	• How much and what types of funding will be needed for the GSA to fulfill its functions over time? • What access to funding is available from the existing entity or entities considering GSA formation? How does this align with projected resource needs during all phases of SGMA implementation? • Is the GSA planning to exercise the authority to collect fees granted by SGMA? If so, via what mechanism(s)? • How will the GSA balance the needs to integrate agencies representing disadvantaged communities and to ensure that they are not unduly burdened financially?
Authority	• What powers and authorities is the GSA planning to assume from those available under the law, and under what circumstances will it exercise them? • What is the rationale for, and what are the likely consequences of, not assuming or exercising certain authorites? • How will the GSA ensure its authority is not duplicative of or conflicting with pre-existing authorities, and coordinate effectively with other entities with releavant authorities? • How will the GSA enforce its decisions on groundwater users if they fail to provide required information or violate other requirements, like pumping restrictions?
Independence	• What mechanisms will ensure the GSA is capable of making difficult decisions necessary to achieve sustainable groundwater management in the basin, even in the face of pressure from competing interests?
Participation	• How will the GSA ensure meaningful participation by a broad spectrum of groundwater users and other affected stakeholders in its decision making? • What capacities do stakeholders have, and what additional support do they need, to participate effectively in all phases of GSA activities?
Representation	• How will representatives be chosen? • How will the GSA ensure adequate representation of diverse stakeholder groups among GSA decision makers? • What role will representatives play in evaluating governance options?
Accountability	• What mechanisms will the GSA put in place to ensure that its employees and consultants do good work? • What mechanisms will the GSA put in place to ensure effective oversight and enforcement of fees, extraction limits, and other requirements it adopts? • How will the GSA measure progress toward sustainable management? • How will the GSA be accountable to groundwater users and other stakeholders for the success of its management actions? • How will the GSA engage with DWR and the Board in their oversight and enforcement roles?
Transparency	• How will the GSA ensure transparent decision making? • What information will be disclosed, what information withheld, and why? From which stakeholders, decision makers and community groups? • How will assumptions, data, and modeling results be communicated to the public? • How will the GSA track and communicate progress toward meeting sustainability goals?