September 9, 2019

Governor Gavin Newsom
State Capitol
Sacramento, CA 95814

RE: Water Resilience Portfolio

Dear Governor Newsom,

The undersigned organizations constitute the Groundwater Leadership Forum (GLF), a diverse group of non-profit organizations and non-partisan academic institutions convened by the Water Foundation dedicated to the sustainability of California’s water resources. The GLF formed to advance the implementation and realize the vision of the Sustainable Groundwater Management Act (SGMA) of 2014. Our member organizations have legal, technical, scientific, and practical expertise that informs our engagement in the implementation of SGMA. Many of our groups worked to shape the legislation that became SGMA and we are all working to achieve the law’s vision of sustainably managed groundwater that supports our economy, communities, and environment.

Successful implementation of SGMA is not only a cornerstone of climate resilience but forms the basis for successful management of all of California’s groundwater resources. We applaud your effort to develop a much needed “Water Resilience Portfolio” and urge you to make sustainable groundwater management a central pillar of the Water Resilience Portfolio. Unfortunately, California’s groundwater is threatened. Groundwater mismanagement is distressingly common; with lack of regulation and heavy pumping, overuse has destroyed infrastructure and put farms, communities, and ecosystems at risk. Although not as visible as California’s rivers, groundwater provides about one-third to half of the state’s water supply and an essential lifeline when rivers run low during drought. In many areas of the state the quality of this important water supply is severely impaired, making it unsuitable for basic needs.

SGMA is one step toward changing all of this. The 2014 law is also a generational opportunity for the management of California’s water and environmental resources to reflect their physical, economic, and social importance. Put simply, SGMA is vital to the state’s future.

Achieving groundwater sustainability goals (including but not limited to those addressed by SGMA), however, is an ongoing challenge which matches the ambition of the law. Much work remains to ensure effective governance, inclusion of science as a foundation for groundwater sustainability plans (GSP), meaningful representation by
underserved communities, and the creative actions that will allow SGMA to achieve its potential. Our organizations are currently reviewing draft GSPs being prepared for critically overdrafted basins, and are finding common and serious flaws; the GSPs are largely deficient in identifying specific and timely implementation actions and local funding sources. We are concerned that plans will be deemed adequate by the Department of Water Resources (DWR), but that only minimal efforts will be made in the initial 5-year implementation period to actually invest in or promote sustainable groundwater management at the local level. Such inaction could have catastrophic impacts on small communities reliant on shallow wells, on groundwater dependent ecosystems, and the agricultural sector, particularly if a drought occurs during that period (a likely event).

This Administration arrives at a crucial point in the state’s water history. Real progress is already being made, but without concerted and continued support from this Administration, the opportunity may be lost. Proactive stewardship of SGMA’s initiatives and continued innovation will be an important achievement to bring balance in California’s water management and ensure we are better prepared for climate change. Our comments and recommendations to achieve resilience by promoting groundwater sustainability are below.

**General comments and recommendations**

1. **Simultaneously advancing equity while preparing our state for the impacts of climate change will lead to true resilience.** Water resilience is only achievable by integrating climate and equity elements. Climate change will have effects on virtually all aspects of water management in the state. Because a warming planet will result in increased extremes when it comes to California’s precipitation, groundwater will serve as an even more important buffer for both wet and dry times. To better understand and adapt to climate conditions, climate change projections must be quantitatively integrated into all aspects of water management, including water supply, water quality, flood risk, infrastructure, land-use, ecosystem resilience and according water plans, policies and regulations.

In the last drought, tens of thousands of Californians lost access to water supplies because of declining groundwater levels. As droughts and other impacts of climate change worsen, disadvantaged and vulnerable populations will be most impacted due to existing environmental stressors, a lack of community resources, and an existing emergency response system that favors those with resources (like property owners and the insured) instead of those who need it the most. As in all aspects of California governance, resilience for vulnerable communities depends upon upfront planning and resources and a swift response when impacts are felt. Our specific recommendations are as follows:

1.1. **Strengthen SGMA regulations to require that projects and management actions quantitatively account for climate change.** Current regulations are limited to requiring consideration of climate change in the annual water budgets in GSPs;

1.2. **Establish statewide protocols for consistent integration of quantitative climate change approaches across state agencies.** This could be achieved by permanently empaneling the Climate Change Technical Advisory Group (CCTAG) and providing feedback mechanisms between the group and state agencies. We have seen signs of inconsistent climate change approaches and guidance from DWR that contradicts recommendations by the CCTAG;
1.3. Support and promote research to identify the most vulnerable populations that are less able to adapt to climate change impacts on water resources and provide these communities with the means to participate in the planning and adaptive development process; and,

1.4. Ensure that adopted GSPs include provisions to identify and assist low-income communities that may be impacted by lowering groundwater levels or worsening water quality.

2. **Prioritize greatest needs, integrate investment, and achieve multiple outcomes.** Integration and prioritization will be key. We have to think beyond the traditional silos that have divided the water sector. For example, flood risk reduction must be done in tandem with ecosystem restoration and even groundwater recharge. Flood-MAR is off to a good start by envisioning the type of paradigm shift that will be needed to meet the challenges of our changing climate and hydrologic cycle. This type of planning (and implementation of plans) must be cross-sectoral, address multiple needs, and be inclusive of all stakeholders.

Integrated efforts can no longer be the usual stakeholders in the water sector coming together to create a joint project list that fails to break down silos and leave disadvantaged communities (DACs) or the environment behind. Specific recommendations are:

2.1. Identify areas with the greatest risk to economic, community, and environmental concerns and target state investment to those areas (the designation of “critically overdrafted” basins is a great step in this direction, but could go further in identifying risk and need by doing this type of analysis at a finer scale).

2.2. Direct state funding to projects that provide multiple benefits while implementing SGMA. Many bond issues have done this already, but a more rigorous definition and clear guidance for truly “multi-benefit” projects would help; and,

2.3. Fund coordinated efforts to encourage early implementation of management actions that benefit DACs and groundwater-dependent ecosystems.

**Specific Comments and Recommendations**

1. **Water and land use integration.** Regional and state efforts that cross jurisdictions and sectors to better integrate water management with land use planning is critical to ensuring water resilience for years to come. While water management and land-use planning remain highly fragmented across the state, SGMA provides a perfect opportunity to make progress toward integration. For the first time, local land use agencies have an opportunity to be full partners with water agencies in shaping groundwater governance. This should be strongly encouraged by state leadership, in direct support of Executive Order N-10-19 Principles “a,” “b,” “d,” and “g.” The following three points outline specific ways in which SGMA can be leveraged to better achieve water and land use integration, with the higher goal of long-term water resilience.

1.1. Maximize positive impacts and minimize negative impacts of GSPs on land use into the future. New water budgets will force changes to the agricultural landscape. For many high- and medium-priority groundwater basins for which agriculture
has been the predominant industry, especially those experiencing critical overdraft, some land fallowing is inevitable. Yet uncoordinated, patchwork land fallowing poses significant risks to regional air quality, aquifer recharge, and economic development opportunities and misses opportunities for habitat connectivity:

1.1.1. Ensure that land use change resulting from SGMA is coordinated at both the basin- and regional-scale, in order to promote multi-benefit projects and avoid economic abandonment of communities;

1.1.2. Prioritize land protection, retirement, and transition in a way that preserves the highest quality agricultural land, prevents sprawl development, minimizes ecosystem degradation, and maximizes benefits for a replacement economy based on appropriate natural infrastructure uses (e.g., groundwater recharge, stormwater treatment, open space, habitat restoration, carbon sequestration, solar or wind generation, etc.).

1.1.3. Establish incentives and guidelines for landowners to restore habitat or pursue groundwater recharge projects on lands that come out of production;

1.1.4. Require that land fallowing programs be coordinated across a basin or sub-basin, strategic, and developed with active community engagement, taking into consideration local priorities and the impacts on all community members, including historically under-represented groups; and,

1.1.5. Advance economic and workforce development investments to offset any job losses from land fallowing or other community impacts, and to assist communities in transitioning from an agricultural-based economy to the new alternatives.

1.2. Support legislation that places additional conditions on development in GSP-designated recharge areas. Groundwater aquifers have always served as California’s water “savings account.” Excessive pumping, over-allocation of surface water supplies, and uncoordinated land development have greatly reduced recharge rates. Proactive groundwater recharge is critical to the success of SGMA, and the long-term water resilience of the state:

1.2.1. Encourage protection of critical recharge areas identified in GSPs. GSPs already identify specific land parcels as highest priority for recharge. State agencies could enhance the rigor of such analysis by making available statewide soil quality and land use mapping data and providing guidance on the use of appropriate decision support tools, such as those recommended in the research framework of Flood-MAR. (Note: underlying groundwater quality would also have to be taken into account, so as not to prioritize recharge in a contaminated aquifer zone; and,

1.2.2. Support legislation to incentivize groundwater recharge projects and dis incentivize development of identified priority recharge areas. This could take the form of a “SGMA Williamson Act” that would enable local governments (GSAs, cities, counties, or other special districts with land use authority) to enter into contracts with private landowners for the purpose of designating specific parcels of land as groundwater recharge areas and
other compatible uses. In return, landowners would receive property tax assessments at a lower than normal rate, based on groundwater recharge and open space uses as opposed to full market value.

1.3. *Update standards and restrictions on local well drilling.* Outdated well drilling ordinances based on pre-SGMA understanding of groundwater poses a significant threat to the ability of GSAs to achieve their sustainability goals, and to the state’s long-term water resilience. DWR’s current well drilling standards have not been addressed since the 1970s:

1.3.1. Direct DWR to update its well construction standards to incorporate the best available science and technology, especially to prevent cross-contamination of aquifers; and,

1.3.2. Direct DWR to develop robust guidance for local well drilling ordinances that will place more stringent analysis on whether or not a well permit should be issued, and the potential impacts to other groundwater uses and users in the basin as well as adjacent basins, if said permit were issued. This will drastically improve regional SGMA compliance.

2. *Transparency & Inclusion.* SGMA prioritized public engagement and the inclusion of beneficial users of groundwater in planning and implementation. This is not just good policy; it’s necessary to ensure public support for local plans that may pose significant changes to local land use and water management decisions. Without additional measures, the provisions in SGMA will not be enough to manifest collaborative and stakeholder-driven water policy.

2.1. *Increase public engagement and transparency at the Natural Resources Agency and DWR.* SGMA created significant requirements for public and stakeholder engagement, but DWR’s oversight of those requirements has been lacking. DWR could improve its public engagement efforts by emulating the State Water Resources Control Board’s (State Water Board) efforts.

2.1.1. Direct the Natural Resources Agency to develop public engagement guidance for its departments.

2.1.2. Direct DWR to establish an Office of Public Participation to ensure that all of its programs consistently and adequately seek and encourage public input; this will help avoid unintended consequences.

2.1.3. Direct the new Office of Public Participation to develop guidance to improve noticing and distribution of public comment opportunities, as well as ensure agency response to stakeholder concerns.

2.2. *DWR should require GSAs to provide technical support so that stakeholders can understand the technical components of the GSPs including modelling assumptions and outcomes.* While open public access to modeling assumptions and data is already required for post-SGMA developed models, GSAs should provide the necessary means for stakeholders and the general public to understand, engage with, and evaluate water decisions made by GSAs.
2.3. **Ensure that DWR holds local agencies accountable for their engagement of beneficial users and the general public in developing GSPs.** DWR has suggested that their evaluation of public engagement efforts will be based on public comments received. But that assumes sufficient outreach, education and consultation has been conducted so that beneficial users and the public are aware of the opportunity to comment and are provided the tools to understand and respond to extremely long and complex plans. The main avenue for ensuring that such outreach and engagement has occurred is the requirement (CCR § 354.10) that each GSP include a communications plan. Unfortunately, DWR has signaled that they will not enforce even these minimal requirements in their evaluation of plan adequacy. We recommend the following actions to address this problem:

2.3.1. Clarify that stakeholder and public engagement is essential to the success of SGMA and provide notice to GSAs that communications plans must be robust (and provide specific guidance, including example scenarios, on what would or would not be considered “robust”);

2.3.2. Ensure that existing funds, including Prop 68, provide funding for stakeholder outreach, engagement and education around SGMA; and,

2.3.3. Provide new funding for ongoing stakeholder and public engagement in SGMA implementation.

2.4. **Provide clear guidance to local agencies to ensure adequate stakeholder engagement is happening within GSP development.** Beneficial users that are not eligible GSA members are being short-changed, both in representation on GSA Boards and advisory committees and by a lack of consultation in the development of Sustainable Management Criteria.

2.4.1. Add in a component to the communication plan requirements that draws a through-line between who is being engaged (how were beneficial users identified and who is on the interested parties list), how they are being engaged, and how their concerns are being addressed in the GSP;

2.4.2. Collect and share successful models of community engagement. There are many successful models of stakeholder integration and engagement; three of our organizations developed a guidance document which has been removed from the SGMA website\(^1\) which provides many examples of local agency efforts; this report should be reposted on the SGMA website;

2.4.3. Include a link to the Groundwater Exchange ([www.groundwaterexchange.org/](http://www.groundwaterexchange.org/)) on DWR’s web site; and,

2.4.4. Direct DWR to, as part of its GSP review, identify how GSAs have and will continue to invest in needed outreach and education efforts.

3. **Water Quality and Drinking Water.** Groundwater is a major source of drinking water in California. In some areas of the state, notably the Central Valley and Central Coast, over 90% of the population is mostly or solely reliant on groundwater for their drinking water supply. Much of that groundwater is vulnerable to man-made contamination that leaches from the surface to shallow wells. The most prevalent man-made groundwater

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\(^1\) **Collaborating for Success, Stakeholder Engagement for Sustainable Groundwater Management Act Implementation,** Community Water Center et. al., 2015
contaminant is nitrate, which is overwhelmingly a product of agriculture, but in more urbanized areas, a cocktail of industrial chemicals have impacted drinking water supplies as well. As part of its growing oversight of groundwater, the State must do a better job of protecting the quality of this increasingly important source of drinking water. Strategically using the newly passed Safe and Affordable Drinking Water Fund can help communities access safe and affordable drinking water supplies, but the state and other actors also need to better address source control. Without a concurrent focus on more effective source control, we will likely be faced with ballooning future investments in providing safe drinking water to all Californians since more and more sources will be subject to contamination.

3.1. **Direct a review of State Water Board programs that protect and restore water quality** (including Basin Plans and Waste Discharge Requirements) to determine whether or not these programs are resulting in improved outcomes to prevent degradation of groundwater quality. Where plans or programs are deficient, the State Water Board should develop a plan - including schedules and milestones - for ensuring effectiveness of these programs in addressing source control and/or restoring the quality of impaired groundwater.

3.2. **Direct DWR to work with the State Water Board to identify minimum standards for water quality components of GSPs submitted for approval in January 2020 and January 2022.** At minimum plans should identify:

3.2.1. Populations most likely to be negatively impacted by GSP implementation, where those impacts will occur and how those populations can be assisted. The groundwater vulnerability tools being prepared by the Community Water Center can help identify communities most likely to be impacted. DWR should make that tool publicly available;

3.2.2. Potential benefits of GSP implementation on water quality and how those benefits will be realized;

3.2.3. How recharge areas are being protected from water quality impacts, for instance through changes in local zoning; and,

3.2.4. Further, GSPs must adequately integrate water quality concerns rather than relying upon other regulatory programs such as the Irrigated Lands Regulatory Program, Dairy General Order, or the proposed Central Valley Basin Plan Amendment for salts and nitrates.

3.3. **Address legacy and ongoing source pollution.** For decades, the lack of understanding how practices on agricultural and animal operations were impacting drinking water quality as well as a lack of focus on the impact of leaky septic systems have resulted in serious nitrate contamination of our state’s drinking water supplies. While a greater focus has been given to tracking, reducing, and preventing nitrate ongoing contamination from a number of sources, legacy contamination still impacts the drinking water supplies of a large portion of our state. In order to address both legacy and ongoing source pollution, there are a number of practices that can be implemented that will benefit both drinking water supplies - now and into the future - and industries like agriculture. For example, in areas where recharging the aquifer would help dilute the nitrates in the water,
certain crops can tolerate flooding for recharge so long as the flooded lands are in compliance with their nutrient management plan. Incentives can be found to encourage eligible growers to allow a project like this to be implemented.

3.3.1. Emphasize the implementation of best practices by potential dischargers of nitrates. This may require additional resources to be invested by the state in researching and developing new practices/technologies, providing incentives to growers or other eligible entities to implement these new practices/technologies, and qualified technical assistance to support their effective implementation; and,

3.3.2. Leaky septic systems must be identified and then either repaired, replaced, or removed in favor of a wastewater system consolidation. This will require additional funding to be provided to the Regional Water Boards in order to implement this relatively new authority. Further, the State Water Board needs to be pressured into creating a guidance document for the Regional Boards on how to go about a wastewater consolidation.

3.4. Equitable access to safe and affordable drinking water. The state has a number of funding sources that can be utilized to help communities obtain safe and affordable drinking water. Many of these sources will need to be combined to create packages that fit the specific needs of the applicants. When the State Water Board begins drafting the funding guidelines for the SADWF, the guidelines must include a clear, and strong, emphasis on provision of funding to severely disadvantaged communities and DAC residents and also provide an easy method for applicants to understand how to access both capital infrastructure funding as well as operations and maintenance funding - needs that may pull from multiple sources.

4. Funding and financing. It goes without saying that realizing SGMA’s vision of sustainable groundwater management will take a sustained financial investment on the part of state and local agencies. While recent bonds and budget appropriations have made a down payment, it appears that the investment in SGMA to date is still insufficient. An indicator of this may be the many draft GSPs that are currently being reviewed; these lack detail and specificity on management actions. This is undoubtedly due in part to the lack of funding sources for those actions. The state should continue to develop financial incentives that encourage and supplement – rather than replace – local funding sources. This includes providing matching funds for actions the state seeks to encourage such as demand management, development of a monitoring system and updating local ordinances on well permitting and land use as well as for multi-benefit groundwater recharge projects and strategic land fallowing programs.

4.1. Adequately fund and staff DWR and the State Water Board to carry out mandates under SGMA and other groundwater programs. Furthermore, ensure these agencies have the appropriate expertise to fulfill their mandates. The passage of SGMA significantly added to the workloads of both DWR and the State Water Board. A real concern is that the first GSPs are due to DWR in early 2020, yet it still does not appear that DWR has the necessary staff in place to thoroughly review GSPs for critically overdrafted basins. In order for the state to be successful in these
programs, more resources will be necessary.

4.1.1. Ensure that Bulletin 118 is reviewed and updated and that current assumptions about groundwater basins are questioned.

4.1.2. Ensure that basins not protected by SGMA are sufficiently monitored so that significant and unsustainable increases in pumping can be detected in real time.

4.1.3. Provide ongoing education and oversight to basins subject to SGMA requirements, in particular ensuring the active engagement of all beneficial users of groundwater and the general public.

4.2. Provide state funding to match local funding and support GSAs and other local agencies so that they can successfully implement SGMA. The state will need to make a significant investment in local efforts to achieve sustainable groundwater management. Proposition 1 (2014) and Proposition 68 (2018) provide a substantial investment of bond funds in local efforts. More investment will be needed. Future bond issues should build on the investments made by these initiatives. Finally, the state should look to General Fund and other (non-bond) sources to help fund ongoing maintenance, operations, and staffing that cannot be sustained by bond funds.

4.3. Ensure that projects using public dollars show benefits under a climate changed future. Projects should show how they would perform under multiple climate scenarios, including both wetter and drier extremes, rather than averaging scenarios or taking a “median” approach. Additionally, projects should calculate benefits under these scenarios for the entire expected lifetime of the project, particularly those expected to last beyond mid-century, when climate models project the greatest impacts to manifest.

4.4. Provide adequate funding to implement Flood-MAR recommendations (see 6.1 and 6.2, below for recommendations).

5. Data and technical needs to support sustainable groundwater management. There is a need to improve our understanding and knowledge about groundwater basins and conditions. The state can demonstrate leadership by providing guidance and funding, ensuring that data and information is transparent, and help to foster integration of groundwater data with Open and Transparent Water Data Act (AB 1755) efforts.

5.1. Require that documentation for groundwater models (including pre-developed models) clearly includes: model objective, all input data and sources, modeling platform, temporal and spatial resolution and extent, modeling assumptions and limitations, calibration and validation process, and analyzed scenarios. Regulations already require that all models developed after January 1, 2015, be open source and made available to the public and rely on the most current climate change data and scenarios. The disclosure of such documentation would not jeopardize the actual intellectual property of the models and it would improve transparency and provide the public with the means to evaluate and understand the development of such elements.
5.2. **Improve domestic well data.** Work with United States Geological Survey (USGS) to expand statewide domestic well monitoring programs to better capture changes in groundwater quality and levels in shallow aquifer wells. Work with USGS’ Groundwater Ambient Monitoring and Assessment (GAMA) Program to refine well completion report data to link individual well completion reports to Geotracker GAMA to better understand the relationship between individual well depth and groundwater quality.

5.3. **Expand and improve the California Statewide Groundwater Elevation Monitoring (CASGEM) Program.** Direct DWR to review the CASGEM monitoring network for adequacy and determine where additional monitoring wells are needed. In particular, DWR should identify low-priority basins that are at risk of being exploited due to an increase in water-intensive land uses or proximity to a medium or high priority basin.

5.4. **Direct DWR to develop best practices for groundwater trading programs.** Guidance should be provided for both intra- and inter-basin groundwater trading programs, including standards on measuring, reporting, accounting, and monitoring of groundwater use and trading. A “healthy” water trading program must address the needs of communities and the environment as a baseline and build in mitigation to offset any impacts to either that may result from trading or transfers.

5.5. **Direct the Office of Digital Innovation to assess the barriers that prevent innovation and deployment of new technologies at the state in consultation with the AB 1755 Partner Agency Team and the California Water Data Consortium.** Make recommendations by July 1, 2020 that will encourage public-private partnerships and uptake of new technologies and provide funding to support implementation of the recommendations.

5.6. **Encourage stronger linkage between SGMA implementation and AB 1755 implementation,** including development of standards, protocols, guidance, and technical assistance related to data collection and reporting, models, and water budgets.

5.7. **Fund the development of standards, protocols, guidance, and technical assistance to improve interoperability of water data and support implementation of the AB 1755,** including recommendations to streamline data submitted to the state while improving the accessibility of information, in partnership with the California Water Data Consortium.

6. **Resilient water storage investments.** Increased water storage is necessary to confront an increasingly altered hydrologic cycle. When water is abundant, it will need to be stored for times of scarcity. California will need to re-envision its approach to water storage (the Water Storage Investment Program is a good start) and prioritize groundwater recharge and storage projects that provide multiple benefits in order to be resilient to greater extremes. Fortunately, groundwater storage is relatively cost-efficient when compared to other approaches to delivering water during times of scarcity.
6.1. **Advance groundwater recharge by funding and implementing Flood-MAR recommendations.** Flood-MAR has tremendous promise to chart a new path forward by delivering multiple benefit projects that will make the state more resilient to climate change. Specific actions include:

6.1.1. Develop watershed scale water availability analyses that identify how much water can be captured for recharge during future climate and management scenarios;

6.1.2. Establish minimum flow standards on streams and rivers so that instream beneficial uses are addressed when determining whether water is available for recharge; and,

6.1.3. Develop incentives for taking water for recharge on appropriate active farmland, subject to water quality considerations.

6.1.4. Develop incentives to prioritize recharge on floodplains to maximize the co-benefits of groundwater recharge, improved flood protection and ecosystem restoration. Floodplains present unique opportunities for synergies between multiple societal and policy objectives.

6.2. **Direct DWR to provide technical assistance and funding to support implementation of the Flood-MAR Research and Data (R&D) plan.** The R&D plan contains recommendations on the development of tools and data as well as other actions that can be taken to maximize groundwater recharge while managing flood risk. Implementing this initiative will improve groundwater management and take other steps to improve resiliency.

6.3. **Focus future investments in surface storage on silt removal and re-operation to restore existing capacity.**

6.4. **Invest in the development of operation models for forecast-informed reservoir re-operations that allow for balanced human and environmental water management objectives.**

The members of the GLF appreciate the opportunity to provide these comments and recommendations to help inform the Water Resilience Portfolio and would be happy to meet with representatives of your Administration to discuss any of these recommendations in greater detail. Please contact Jennifer Clary ([jclary@cleanwater.org](mailto:jclary@cleanwater.org)), Pablo Garza ([pgarza@edf.org](mailto:pgarza@edf.org)) or Danielle Dolan ([ddolan@lgc.org](mailto:ddolan@lgc.org)) for any follow-up questions or more information.

CC: Nancy Vogel, Director of Governor’s Water Resilience Portfolio, Natural Resources Agency