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Submitted via email to wue@water.ca.gov

Mark W. Cowin
Director, California Department of Water Resources

Felicia Marcus
Chair, State Water Resources Control Board

Michael Picker
President, California Public Utilities Commission

Karen Ross
Secretary, California Department of Food and Agriculture

Robert B. Weisenmiller
Chair, California Energy Commission

RE: Comments on the Agricultural Water Use Efficiency Recommendations in the *Making Water Conservation a California Way of Life: Implementing Executive Order B-37-16* Public Review Draft

Dear Executive Order Agencies:

The Natural Resources Defense Council (NRDC), Community Water Center, The Bay Institute, Monterey Coastkeeper, Russian Riverkeeper, California Coastkeeper Alliance, Santa Barbara Channelkeeper, Endangered Habitats League (EHL), Clean Water Action California, Pacific Institute, and Environment Now appreciate the opportunity to provide comments to the Department of Water Resources (DWR or the Department), the State Water Resources Control Board (SWRCB or the Water Board), the California Department of Food and Agriculture (CDFA), the California Public Utilities Commission (CPUC), and the California Energy Commission (CEC) (henceforth referred to as the “EO Agencies”). Governor Brown’s Executive

Order B-37-16 (EO B-37-16, or EO) directed the EO Agencies to take actions to use water more wisely, eliminate water waste, strengthen drought resilience, and improve agricultural water use efficiency and drought planning. Our comments focus specifically on the recommendations in the Public Review Draft related to improving planning and water use efficiency in California's agricultural sector.

While EO B-37-16 addresses certain aspects of agricultural water use, there are critical gaps when it comes to a vast amount of irrigated acreage in California. Notably, agricultural water suppliers serving less than 10,000 irrigated acres remain exempt from the state's water management planning requirements. Further, many agricultural water users in California (such as those located in the Pajaro, Salinas, and Santa Maria valleys of the Central Coast; the North Coast; and the Russian River Valley) rely on water from private groundwater wells and do not receive supplies from agricultural water suppliers. Thus, those water users also are not directly addressed by the EO's directives. These gaps in coverage along with the extended implementation deadlines of the Sustainable Groundwater Management Act may require additional emergency executive action to increase agricultural water conservation in the event of prolonged drought conditions.

Additionally, we urge the EO Agencies to carefully consider how other planning requirements, such as the annual irrigation and nutrient management plans proposed under the Water Board's Irrigated Lands Regulatory Program, might enhance, streamline, or improve DWR's agricultural water use efficiency efforts.¹

We recommend that the EO Agencies consider the following when finalizing the Public Review Draft:

1. The proposed water budget approach and water use efficiency quantification methods will not result in increased agricultural water use efficiency;
2. There is insufficient data for agricultural water suppliers to complete an accurate water budget;
3. Annual farm-gate delivery reports should not be eliminated in favor of a more complex and burdensome annual water budget report;
4. Both Agricultural Water Management Plan (AWMP) and Efficient Water Management Practice (EWMP) requirements should be permanently extended to agricultural water suppliers serving between 10,000 and 25,000 irrigated acres;

¹ The Water Board is reviewing the Waste Discharge Requirements General Order No. R5-2012-0116 for growers within the Eastern San Joaquin River Watershed that are members of the third-party group. Draft changes were provided to the public in February 2016; since that time, staff have held several workshops and received public comments that will shape the final proposal. The Water Board has indicated that the revised order will be precedential. A key recommendation in the current draft is that all farming operations develop certified irrigation and nutrient management plans annually. Since water use efficiency is a key tool for limiting the nitrate leaching to groundwater, it is possible that these plans could serve as a proxy for some water use efficiency requirements.

5. The transparency and effectiveness of the existing AWMP process should be improved before large-scale changes are made;
6. Tools and resources are critical for enabling and supporting effective implementation of planning requirements by agricultural water suppliers;
7. Efficiency practices should be improved by (a) establishing flexible scheduling of water deliveries to customers as a critical EWMP to reduce water waste and (b) establishing promotion of soil health as a new conditional EWMP; and
8. More robust compliance and enforcement action against agricultural water suppliers that fail to comply with AWMP and EWMP requirements is necessary to increase agricultural water savings.

These recommendations, which are more fully explained below, will help achieve the executive order's vision of making water conservation a way of life and contribute to a more sustainable water future for California agriculture.

1. The proposed water budget approach and water use efficiency quantification methods will not result in increased agricultural water use efficiency

EO B-37-16 clearly calls for the EO Agencies to update existing requirements to “increase water efficiency,”² yet the changes proposed in the Public Review Draft are non-responsive to that directive. The Public Review Draft proposes a very substantial revision to the agricultural water management planning process, which would require agricultural water suppliers to develop a water budget as part of their AWMP and for a new annual report.³ At its core, a water budget is an attempt to account for the inflow and outflow of water within a defined area, without considering whether the water used is essential or efficient.⁴ We have serious concerns that a water budget approach for characterizing agricultural water use efficiency creates a risk that opportunities to make more efficient use of water, such as through a range of on-farm and district-level practices, will be obscured or overlooked in the quest to find “balance.”

Additionally, the related proposal to require agricultural water suppliers to use one of four methods to quantify agricultural water use efficiency is equally unlikely to result in the more efficient use of water, as directed by the EO. We disagree with the Public Review Draft's contention that the proposed water use fractions are “practical methods for quantifying the efficiency of agricultural water use by irrigated agriculture and other beneficial uses that can help agricultural water suppliers evaluate current conditions and strategies for improving agricultural

² Executive Order B-37-16, Directive 11 (May 9, 2016).

³ Public Review Draft, pp. 3-20 to 3-21.

⁴ The term “water budget” as used by the EO Agencies with respect to agricultural water management plans should not be confused with the water *budget* concept being developed for urban water management plans. The water budget in the urban context is essentially an allowance for water use to meet the supplemental water requirements of a single crop (i.e., turf grass). In contrast, the water budget proposed by DWR for AWMPs does not generate a water use allowance, but rather is limited to simply an accounting of water moving into and out of a water supplier's service area.

water management.”⁵ We have several concerns with this proposed approach for quantifying efficiency. Chief among these is that the “beneficial” use of water should not be confused with “efficient” use of water.

Agricultural water use efficiency should be based solely on the fraction of water actually consumed by crops (i.e., crop consumptive use) compared to the total volume of water applied. We recognize that non-crop uses, such as agronomic and environmental uses, are appropriately part of a calculation of “reasonable and beneficial uses,”⁶ but this is a separate and distinct question from water use efficiency. For one, there are no objective standards for assessing what level of water use for such purposes is efficient, and it cannot be the case that *all* water used for agricultural purposes is both essential *and* efficient.

Some of these ancillary agricultural water uses may be “beneficial,” but it is important to recognize that there can be substantial non-beneficial and adverse impacts as well. Thus in some cases, inefficient or marginally efficient agricultural water use can contribute to some positive benefits (e.g., groundwater recharge, wildlife habitat), in some cases it can yield negative results (e.g., surface and groundwater pollution, greater evaporative losses, increased water diversions, declines in fish populations), and in some cases it results in economic inefficiencies (e.g., growers paying for water that is not used by them, but is used without compensation by other growers). These facets are appropriately addressed as part of an assessment of reasonable and beneficial uses, but not as part of an assessment of agricultural water use efficiency. For example, groundwater recharge is extremely important and can be a reasonable and beneficial use of water; however, that does not mean that recharging groundwater through incidental canal seepage is necessarily an efficient use of water.

Such an approach also fails to recognize the many important benefits from increasing agricultural water use efficiency.⁷ First and foremost, efficiency improvements maintain and enhance the reliability of agricultural water supplies and make farms more resilient to water supply shortages arising from future droughts and climate change. When less water is taken from rivers, streams, and aquifers, there is often more water available for use in future years. Farms that require less water to meet irrigation and other agronomic needs invariably are more resilient and less vulnerable to periods of limited water availability, such as during drought. More efficient farms also improve water quality as less polluted runoff contaminates our streams, rivers, and aquifers. Lastly, reduced water diversions leave more water to support instream flows, which are critical for maintaining the health of aquatic ecosystems that support native fisheries, such as the Bay-Delta estuary. Accordingly, a water budget approach is not an effective means for achieving the EO’s directive to improve water use efficiency in California agriculture.

⁵ Public Review Draft, p. 3-21.

⁶ “Reasonable and beneficial use” is a legal term of art that should not be conflated with “efficient water use.”

⁷ See e.g., Pacific Institute, “Multiple Benefits of Water Conservation and Efficiency for California Agriculture,” July 2014, available at <http://pacinst.org/publication/multiple-benefits-of-water-conservation-and-efficiency-for-california-agriculture/>.

Contrary to the EO's intent, the proposed water budget and water use efficiency quantification methods are unlikely to improve agricultural water use efficiency because these approaches alone do not allow for the evaluation and identification of specific efficiency practices or enable irrigation districts to achieve specific water conservation outcomes and results.

Further, U.S. Bureau of Reclamation (USBR) contractors will still be required to develop water conservation plans pursuant to either the federal Central Valley Project Improvement Act or the federal Reclamation Reform Act of 1982. These agricultural water suppliers are currently able to submit their USBR plans to comply with AWMP requirements.⁸ The addition of a complex water budget requirement, which has likely little benefit, will pose an additional and unnecessary burden on these particular suppliers.

2. There is insufficient data for agricultural water suppliers to complete an accurate water budget

Apart from the underlying fact that the development of a water budget is unlikely to result in the more efficient use of water, there also are significant data acquisition and accuracy challenges with the proposed approach. Few, if any, of the key components of a water budget are directly measured at present.⁹ For most water suppliers, these values will initially, and for the foreseeable future, simply be guesses. The values for some components (e.g., deep percolation) will be inferred from other components that have wide bands of accuracy (e.g., effective precipitation, crop ET). Thus, the inaccuracy of one component will compound the inaccuracy of other components, resulting in a water budget that is neither accurate nor useful. In fact, agricultural water suppliers have raised many of these same concerns in comments submitted to DWR.¹⁰

Additionally, while the Public Review Draft proposes that the annual water budgets developed for AWMPs include private groundwater pumping,¹¹ water suppliers are not required to include private groundwater pumping and evapotranspiration values in the proposed annual water budget reports unless the state makes tools and resources available. A water budget will not be of sufficient reliability for use without requiring the reporting of all its components. Unless and until districts have clear authority to compel private users of groundwater to provide usage data, districts will be unable to accurately develop service area water budgets.

If the EO Agencies are committed to pursuing a water budget requirement for future AWMP updates, we strongly urge the establishment of a pilot program over the next five years to test and refine the water budget methodology instead of requiring its use in all 2020 AWMP updates. A pilot program would help to identify the tools and resources necessary for agricultural water

⁸ CA Water Code § 10828.

⁹ Public Review Draft, p. 3-20.

¹⁰ See e.g., Sheridan Nicholas, Wheeler Ridge-Maricopa Water Storage District, email to Fethi Benjemaa and Peter Brostrom, DWR, October 20, 2016, available at http://www.water.ca.gov/wateruseefficiency/conservation/pdfs/20161020_Nicholas_WRMWSD.pdf.

¹¹ Public Review Draft, pp. 3-20 to 3-21.

suppliers to successfully complete a meaningful water budget. By providing funding and technical resources to six or eight agricultural water suppliers of various sizes and cropping types as part of a pilot program, DWR can help to establish best practices for data acquisition and transform the preliminary and vague water budget approach described in the Public Review Draft into a working methodology that incorporates meaningful performance indicators of water efficiency, including integrating consideration of the EWMPs already required by law. While this pilot program is underway, existing AWMP requirements should remain largely in place.

Following a more careful and deliberative approach for widely implementing a water budget requirement is not without precedent. In fact, DWR is already using this approach when implementing new regulations for urban water suppliers. The Department is currently in the process of developing water loss auditing and reporting requirements as required by SB 555 (2015), which requires urban water suppliers to submit a validated annual report on water leaks and losses.¹² In sharp contrast to the rather tenuous water budget requirement proposed for agricultural water suppliers, urban suppliers are required to follow an established water audit methodology developed by the American Water Works Association (AWWA), which includes standardized terminology, criteria for data validity, and accompanying software for uniform reporting. This methodology has been in use by California Urban Water Conservation Council (CUWCC) members for the past five years, and it was finalized only after a lengthy validation and testing process involving many water utilities. Despite the widely-accepted nature of this methodology, DWR and the Water Board have established a multimillion dollar training and education program to assist urban water suppliers in completing the required audits using this method.¹³ It would be ill-advised for DWR to impose a water budget requirement on agricultural water suppliers without first similarly adopting a standard methodology and providing technical assistance.

3. Annual farm-gate delivery reports should not be eliminated in favor of a more complex and burdensome annual water budget report

We strongly oppose the Public Review Draft's recommendation that agricultural water suppliers serving more than 10,000 irrigated acres submit an annual water budget report in lieu of the existing farm-gate delivery report required by AB 1404 (2007).¹⁴ As discussed previously, we have numerous concerns regarding requiring the use of a water budget approach without first clearly articulating how completion of a water budget would result in increased efficiency and carefully defining and establishing a methodology for accurately measuring all inflow and outflow components, including private groundwater pumping.

¹² NRDC, "Cutting Our Losses: California," accessed on November 15, 2016, available at https://www.nrdc.org/sites/default/files/wat_14111801as.pdf.

¹³ DWR, "Validated Water Loss Audit Reporting," accessed on November 15, 2016, available at <http://www.water.ca.gov/wateruseefficiency/wlaudits/>.

¹⁴ Public Review Draft, p. 3-24.

An annual water budget report would represent a substantial departure from the current farm-gate delivery reports and place a significant additional administrative burden on agricultural water suppliers. Farm-gate delivery reports are relatively simple for water suppliers to complete because they only require data on customer water deliveries and a brief description of water measurement practices. Yet despite the simplicity of this report, less than half of agricultural water suppliers have consistently submitted this annual report to DWR.¹⁵ A more complex annual reporting requirement (i.e., water budget report) would undoubtedly lead to even worse compliance.

The existing farm-gate delivery report is foundational for managing and evaluating the distribution and use of irrigation water and could be useful for identifying opportunities for distribution efficiency improvements (e.g., upgrades to irrigation water delivery systems that reduce losses) and on-farm practices. Accordingly, we urge DWR to instead focus on streamlining the existing reporting process to improve quality, timeliness, and report accessibility and to remedy widespread noncompliance through these actions:

- Assembling an accurate database of all agricultural water suppliers responsible for reporting water deliveries;
- Requiring the submission of reports in a functional format (e.g., Excel) that will allow for electronic compilation and posting;
- Reviewing submitted forms for accuracy and completion prior to acceptance;
- Notifying all delinquent filers of the status of their submission, or lack thereof;
- Deferring the processing of any application for state financial assistance from any non-compliant water supplier until its reporting deficiencies are cured; and
- Consider transferring oversight of farm-gate delivery reports to the Water Board to improve compliance.

These changes would directly address Directive 6 of the EO to “accelerate data collection.”

4. Both Agricultural Water Management Plan (AWMP) and Efficient Water Management Practice (EWMP) requirements should be permanently extended to agricultural water suppliers serving between 10,000 and 25,000 irrigated acres

EO B-29-15 explicitly required agricultural water suppliers serving between 10,000 and 25,000 irrigated acres, which were conditionally exempted from SBx7-7 planning regulations, to develop and submit an AWMP by July 1, 2016.¹⁶ EO B-37-16 directs the Department to permanently extend AWMP requirements for these agricultural water suppliers. We fully support

¹⁵ Based on a NRDC review of 2010-2015 farm-gate delivery reports submitted to DWR.

¹⁶ Executive Order B-29-15 (April 1, 2015).

the Public Review Draft’s proposal to require all agricultural water suppliers serving over 10,000 acres of irrigated land to adopt an AWMP by April 1, 2021 and every five years thereafter.¹⁷

However, EO B-37-16 also directs the EO Agencies to “improve water system management, and prioritize capital projects to reduce waste.”¹⁸ Accordingly, we strongly urge DWR to require these suppliers to not only evaluate but also *implement* critical and conditional EWMPs. The AWMP process in isolation, without being paired with required efficiency practices, is unlikely to improve water efficiency or reduce water waste by agricultural water suppliers. The EWMPs, instead, offer real opportunities to enable greater water efficiency at the district and farm levels. In other words, merely developing a water conservation plan does not achieve any water savings. Water suppliers must actually implement water-conserving practices to save water and reduce waste. These would include the measurement and volumetric billing practices required of all districts, as well as the conditional practices found to be locally cost-effective and technically feasible. As such, DWR should permanently extend both AWMP *and* EWMP requirements to suppliers serving between 10,000 and 25,000 irrigated acres.

5. The transparency and effectiveness of the existing AWMP process should be improved before large-scale changes are made

In light of the multiple issues we’ve described above regarding the proposed water budget and efficiency quantification approach, we urge the EO Agencies to instead focus on improving the existing AWMP process in response to EO B-37-16. We offer several recommendations, which have been submitted previously to DWR by a NGO coalition, to accomplish this:¹⁹

- Adopt a standardized reporting format and require electronic filing to improve public access, review, and use of AWMPs

DWR can and should facilitate review of AWMPs by requiring that each plan and future amendments be submitted electronically in a standardized format. DWR has developed an AWMP template and reporting worksheets;²⁰ however, suppliers are not required to report using this format although standardized reporting is required by law.²¹ As a result, the content and structure of individual plans varies substantially, making it difficult for those evaluating a plan (including agency officials, academic researchers, and other districts interested in learning from their peers) to readily

¹⁷ Public Review Draft, p. 3-23.

¹⁸ Executive Order B-37-16, Directive 6 (May 9, 2016).

¹⁹ NRDC, CalCAN, CAFF, Pacific Institute, Letter to Executive Order State Agencies, October 14, 2016, available at http://www.water.ca.gov/wateruseefficiency/conservation/docs/comments/20161014_West_NRDC-CalCAN-CAFF-PL.pdf.

²⁰ See DWR, *A Guidebook to Assist Agricultural Water Suppliers to Prepare a 2015 Agricultural Water Management Plan* (June 2015), available at <http://www.water.ca.gov/waterconditions/docs/Approved-Final-2015-AWMP-Guidebook-June2015.pdf>.

²¹ CA Water Code § 10608.48(e) states that “[t]he [agricultural water management] data shall be reported using a standardized form developed pursuant to Section 10608.52.

locate information. Ensuring consistency in the format and content of AWMPs will help to facilitate review of these plans by both DWR staff and other stakeholders, including the public. Standardized reporting would be particularly useful for DWR to efficiently and effectively assess whether water suppliers are implementing the efficiency practices required by law.²² Additionally, requiring electronic submission of plans, as is required of urban suppliers, will provide for expedited review and public posting of AWMP data, including for research purposes and peer-to-peer sharing among districts.²³ For agricultural water suppliers located in areas with limited or no high-speed internet access, DWR alternatively could accept the submission of AWMPs by mail as a digital file saved on low-cost data storage media (e.g., CD/DVD, USB flash memory drive).

- Establish substantive acceptance criteria for AWMPs regarding content and quality

The usefulness and effectiveness of agricultural water management planning would be greatly enhanced by the establishment of a plan review system within DWR that considers the substance of plans (i.e., content and quality), rather than simply checking for the inclusion of required elements. DWR should contract for independent professional and academic expertise to evaluate submitted AWMPs, guided by these new substantive criteria for the acceptance of plans as complete. Greater attention should be given to topics including the validity of reported data, the accuracy of calculations, the range of new technologies and practices assessed and implemented in the plan, linkages to capital budgeting, and the sources and quality of forecasted conditions. Each of these topics would contribute to the development of plans that are more actionable for districts themselves, and more valuable for the state in any regional, basin-wide, or statewide planning and analysis. Each topic could also become a focus of expanded guidance and technical assistance. DWR's current practice of checking for required plan elements without regard to quality or content encourages the submission of plans with superficial coverage and shallow analysis of measures and strategies that would otherwise offer great promise for improving water efficiency.

6. Tools and resources are critical for enabling and supporting effective implementation of planning requirements by agricultural water suppliers

²² CA Water Code § 10826 explicitly requires water suppliers supplying more than 25,000 irrigated acres to implement critical EWMPs, such as measurement of the volume of water delivered to customers and adoption of a pricing structure that is based at least in part on the amount of water delivered. CA Water Code § 10608.48 requires the implementation of 14 additional EWMPs if they are found to be “locally cost effective and technically feasible.”

²³ For comparison, SB 1420 (2014) added Section 10644(a) to the CA Water Code, which requires electronic submission and standardized tables for urban water management plans. Further, DWR has established the Water Use Efficiency (WUE) data tool to allow for urban water suppliers to submit data online (available at <https://wuedata.water.ca.gov/>).

We urge the EO Agencies to continue to make resources available, and to develop new resources when necessary, to help suppliers prepare AWMPs and implement the required water efficiency practices. In particular, smaller irrigation districts may need technical and financial support to develop AWMPs that adhere to statutory requirements and to implement critical and conditional efficiency practices that conserve water. We recommend that DWR take the following actions to aid agricultural water suppliers in meeting the requisite planning and efficiency requirements:

- Facilitate implementation of efficiency practices by publishing a practical methodology for agricultural water suppliers to use to evaluate the local cost effectiveness and technical feasibility of conditional EWMPs, and develop an AWMP worksheet for reporting these results

State regulations require agricultural water suppliers to implement 14 additional water efficiency practices if they are determined to be “locally cost effective” and “technically feasible.”²⁴ Additionally, DWR’s AWMP guidebook states that agricultural water suppliers must include documentation demonstrating that EWMPs not being implemented fail to meet those criteria.²⁵ Yet a cursory review of select AWMPs confirms that agricultural water suppliers are not completing these determinations and not providing the necessary documentation as required.²⁶

The Department must conduct greater oversight of agricultural water suppliers’ implementation of the 14 conditional EWMPs. At the same time, there is a key opportunity for DWR to develop additional technical resources to support meaningful implementation of these efficiency practices. DWR can and should assist agricultural water suppliers by publishing a practical methodology and requiring its use in evaluating the local cost-effectiveness and technical feasibility of the 14 conditional EWMPs. This methodology should be published by July 2019 for use in developing the 2020 AWMP updates due by April 2021. DWR should also develop an AWMP worksheet for agricultural water suppliers to use to report the outcomes of the cost-effectiveness and technical feasibility evaluations, which would have the added benefit of helping to identify opportunities where additional funding from other sources would support greater adoption of efficiency practices.

- Identify opportunities for peer-to-peer knowledge sharing of agricultural water management best practices

²⁴ CA Water Code § 10608.48(c).

²⁵ DWR 2015, *A Guidebook to Assist Agricultural Water Suppliers to Prepare a 2015 Agricultural Water Management Plan*, p. 58.

²⁶ As described in a NRDC letter to Fethi BenJemaa, DWR, (dated September 14, 2016), Lower Tule River Irrigation District’s AWMP does not include sufficient documentation of the lack of local cost-effectiveness or technical feasibility for conditional EWMPs not being implemented. Fresno Irrigation District is another example of an agricultural water supplier whose 2015 AWMP does not include the required documentation.

Regional workshops dedicated to peer-to-peer learning (including sessions at existing conferences) should be offered to: (1) assist districts with the planning process and (2) enable agricultural water suppliers to share success stories and strategies for overcoming challenges related to the AWMP process and implementation of critical and conditional EWMPs. Although each district faces its own unique challenges, both with planning and with EWMP implementation, providing an opportunity for districts to share their own success stories and strategies for overcoming challenges would be an effective way to ensure that districts are getting the maximum benefit from the planning process.

These knowledge-sharing forums would enable water suppliers, extension agents, researchers, consultants, and other stakeholders to discuss best practices and emerging technologies for planning and assessment, water conservation and efficiency, water measurement, water pricing, capital projects, and finance strategies, among other topics. DWR should work with the Water Board and other state agencies to identify new and existing opportunities to facilitate peer-to-peer learning.

7. Efficiency practices should be improved by (a) establishing flexible scheduling of water deliveries to customers as a critical EWMP to reduce water waste and (b) establishing promotion of soil health as a new conditional EWMP

Modernizing water delivery infrastructure and management systems is a critical step toward improving the water use efficiency and reducing water waste in California agriculture, as directed by the EO. The fixed-schedule water deliveries currently used by many irrigation districts are inherently wasteful because they force the application of water without regard to recent or forecasted precipitation, current soil moisture levels, or crop water needs. In fact, more than 5,300 California farms, or 12 percent of irrigated farms, still receive water on a rotational and not on an as-needed basis.²⁷ Requiring water suppliers to offer 24-hour arranged demand delivery would drastically reduce water waste by enabling farmers to precisely time irrigation to meet crop water requirements without impacting crop yields. Providing flexible delivery is also necessary for many on-farm efficiency improvements, including regulated deficit irrigation and drip irrigation. These practices combined—efficient irrigation technology, improved irrigation scheduling, and regulated deficit irrigation—could help save between 4.5 million and 6.0 million acre feet of water each year.²⁸ Agricultural water suppliers already are required to implement flexible water delivery to customers if determined to be locally cost-effective and technically

²⁷ U.S. Department of Agriculture, “Table 22. Methods Used in Deciding When to Irrigate: 2013,” *2013 Farm and Ranch Irrigation Survey* (2014), available at https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Farm_and_Ranch_Irrigation_Survey/fris13_1_022_022.pdf.

²⁸ Pacific Institute and NRDC, *Agricultural Water Conservation and Efficiency Potential in California* (2014), available at <http://pacinst.org/app/uploads/2014/06/ca-water-ag-efficiency.pdf>

feasible.²⁹ However, given the significant water savings possible from implementing flexible water delivery systems, DWR should establish this practice as a critical EWMP.

While the capital investment necessary to allow for flexible scheduling can be substantial, irrigation districts that have made these improvements have seen numerous benefits. The South San Joaquin Irrigation District (SSJID) completed installation of a fully-pressurized irrigation system to serve its Division 9 area in 2012.³⁰ Prior to its installation, many farmers in the area relied on private groundwater pumping to meet irrigation needs because the District's previous gravity-based delivery system was unreliable. The new irrigation system now allows farmers to receive pressurized deliveries of water on an on-demand basis, which has enabled farmers to upgrade to more efficient irrigation methods (e.g., drip irrigation) and precisely time irrigation to meet crop water needs, resulting in up to a 30 percent increase in crop yields.³¹ Consequently, Division 9 has reduced water deliveries by more than 30 percent and reduced the acreage supplied by groundwater by 50 percent, which also has improved local air quality due to reductions in diesel emissions from groundwater pumps.³² Farmers that have switched from private groundwater also have seen a 34 to 67 percent reduction in costs for using district-supplied water compared to paying for groundwater pumping and improved crop health from using better quality surface water compared to groundwater with higher salinity.³³ Due to the success of the Division 9 pilot, SSJID is evaluating the potential to pressurize its entire delivery system.³⁴

Practices that improve soil health, such as conservation tillage, compost application, and cover cropping, can reduce the need for irrigation by increasing the water infiltration and storage capabilities of soil. As the California Healthy Soils Initiative recognizes, healthy soil also has many additional benefits, including increased soil fertility, reduced erosion, drought resilience, and carbon storage.³⁵ A 2015 NRDC analysis estimates that if half of the total field crop acres in California were planted with cover crops, approximately 540,000 metric tons of greenhouse

²⁹ CA Water Code § 10608.48(c)(6): "Increase flexibility in water ordering by, and delivery to, water customers within operational limits."

³⁰ The \$13 million cost for the irrigation system was offset by a \$1 million grant from the U.S. Bureau of Reclamation. The remaining cost will be paid for by farmer irrigation charges and sales of SSJID electricity and conserved water. See John Enloe, Stantec, "More Crop Per Drop: Delivering Efficiency and Service-Benefits of the South San Joaquin Irrigation District's Pilot Pressure Irrigation Project," February 6, 2014, available at http://static1.1.sqspcdn.com/static/f/734357/24345416/1391901733547/enloe_john_presentation.pdf?token=zJ8S5Ccq6LA5w5WbFDht5V4jLU%3D; and Ryan Balbeuna, "Drought helps net SSJID \$4M so far in water sales," *Manteca Bulletin*, May 4, 2013, available at <http://www.mantecabulletin.com/archives/73250/>.

³¹ Enloe 2014.

³² Jeff Shaw and Todd Kotey, Stantec, "Benefits of the South San Joaquin Irrigation District's Pilot Pressure Irrigation Project," 22nd *International Congress on Irrigation and Drainage*, Gwangju, Korea, September 2014, available at http://www.icid.org/ws_tech_pap2014.pdf.

³³ *Ibid.*

³⁴ John Holland, "SSJID explores remaking entire delivery system," *The Modesto Bee*, September 8, 2015, available at <http://www.modbee.com/news/article34425708.html>.

³⁵ CDFA, "California's Healthy Soils Initiative: Sustaining Soil...Combating Climate Change," accessed November 22, 2016, available at <https://www.cdfa.ca.gov/oeffi/healthysouils/docs/HealthySoilsFactSheet.pdf>.

gases could be captured annually and 10.9 billion gallons of additional water could be stored in the soil.³⁶ In recognition of the multiple water efficiency and drought resiliency benefits from improving soil health, DWR should establish a new conditional EWMP for agricultural water suppliers to facilitate or promote beneficial on-farm practices that improve soil health. For example, an agricultural water supplier could provide funding for conservation plantings, offer cost shares for cover cropping, or facilitate compost collection and storage within its service area. Irrigation districts can play a critical role in incentivizing the adoption of on-farm practices that build soil health, which provide water-saving and other benefits for districts and farmers alike.

8. More robust compliance and enforcement action against agricultural water suppliers that fail to comply with AWMP and EWMP requirements is necessary to increase agricultural water savings

While AWMP regulations have been in place for several years, compliance by agricultural water suppliers continues to be a pervasive problem. In 2013, NRDC and Pacific Institute found that 70 percent of California’s irrigation districts had failed to submit their required 2012 water management plan.³⁷ This lack of compliance has persisted with the most recent 2015 AWMPs. Approximately 40 percent of the agricultural water suppliers supplying more than 25,000 irrigated acres still have not adopted and submitted an AWMP even though there was a January 2016 deadline.³⁸ Additionally, over 60 percent of the agricultural water suppliers serving 10,000-25,000 irrigated acres have yet to adopt and submit an AWMP although there was a compliance deadline of July 1, 2016.³⁹ Further, many agricultural water suppliers that have submitted an AWMP are not fully implementing the required critical and conditional EWMPs and/or have not provided the required analysis to demonstrate that conditional EWMPs not being implemented are neither locally cost effective nor technically feasible.

To address widespread and longstanding noncompliance with AWMP and EWMP requirements, we urge the EO Agencies to pursue the following actions:

- Decline to accept grant and loan applications from agricultural water suppliers that do not comply with planning and reporting requirements

State law prohibits agricultural water suppliers from receiving “a grant or loan awarded or administered by the state” unless they have complied with AWMP requirements.⁴⁰

³⁶ NRDC, “California,” *Climate-Ready Soil: How cover crops can make farms more resilient to extreme weather risks* (2015), available at <https://www.nrdc.org/sites/default/files/climate-ready-soil-CA-IB.pdf>.

³⁷ NRDC and Pacific Institute, *Implementation of the Agricultural Water Management Planning Act: A Review of Agricultural Water Management Plans* (2013), available at <https://www.nrdc.org/resources/implementation-agricultural-water-management-planning-act>.

³⁸ DWR, “2015 Agricultural Water Management Plans,” accessed December 9, 2016, available at <http://www.water.ca.gov/wateruseefficiency/>.

³⁹ *Ibid.*

⁴⁰ SBx7-7 (Water Conservation Act of 2009), codified at CA Water Code § 10852.

Yet this prohibition largely has not been effective in increasing compliance rates due to DWR's historically lax approach to enforcing this provision and the lack of interest by some suppliers in receiving state loans or grants. Although required by state law and Governor Brown's April 2014 executive order, DWR has failed to condition grant eligibility on agricultural water suppliers submitting required plans and reports.⁴¹ To remedy this, the Department must make it a matter of standard practice to reject applications for state funding from agricultural water suppliers that have not submitted an AWMP and all required farm-gate delivery reports by the application deadline. Timely submission of these plans and reports should be a prerequisite before DWR even begins to evaluate a grant application.

Additionally, a recent NRDC review of proposed DWR Proposition 1 grant awards indicated that many agricultural water suppliers poised to receive funding have not complied with requirements relating to the implementation of critical and conditional EWMPs.⁴² To address this issue, the Department must conduct a more substantive assessment of AWMPs to determine the implementation status of the required efficiency practices by agricultural water suppliers. While state regulations prohibit providing state grants or loans to agricultural water suppliers not in compliance with AWMP requirements,⁴³ suppliers that have not implemented the critical EWMPs are still eligible for state funds if they have submitted to DWR for approval "a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices."⁴⁴ To ensure compliance with these regulations, the Department should include language in standard grant award agreements that establishes clear timetables for implementing critical EWMPs and financial consequences, such as repayment of grant funds, for failing to implement according to the agreed upon schedule.

- Initiate SWRCB enforcement action against agricultural water suppliers that do not comply with requirements pertaining to agricultural water planning, implementation of efficiency practices, and farm-gate water delivery reporting

While we support the intent of the Public Review Draft's recommendation that DWR refer agricultural water suppliers that fail to comply with AWMP requirements to the

⁴¹ NRDC's review of DWR's proposed 2015 Prop 1 Agricultural Water Use Efficiency grants identified \$2.7 million in funding proposed for agricultural water suppliers that have not submitted a 2015 AWMP and \$15 million in funding proposed for suppliers that have not submitted required annual farm-gate delivery reports.

⁴² A NRDC letter to Fethi BenJemaa, DWR, on September 14, 2016, provides several examples: Reclamation District 108, Richvale Irrigation District, and Semitropic Water Storage District have not fully implemented or submitted a sufficient compliance plan for implementing critical EWMPs. Similarly, Lower Tule River Irrigation District has failed to include sufficient documentation in its AWMP that implementation of conditional EWMPs are neither locally cost-effective nor technically feasible.

⁴³ CA Water Code § 10608.56(b).

⁴⁴ CA Water Code § 10608.56(d).

Water Board for investigation and enforcement action,⁴⁵ we urge the EO Agencies to strengthen this recommendation to include the reporting of the compliance status of *all* agricultural water suppliers with regard to AWMP, EWMP, *and* farm-gate delivery report requirements by DWR to the Water Board within ninety days of a statutory reporting deadline. Meaningful enforcement of statutory requirements will help to ensure that agricultural water suppliers are preparing and adopting AWMPs and implementing practices to improve efficiency. Further, DWR must not defer compliance status reporting to the Water Board until the next round of AWMPs are due in 2021. As described previously, failure to submit required AWMPs and annual farm-gate delivery reports and implement EWMPs has been a widespread problem. Agricultural water suppliers that have failed to follow existing requirements, such as development of 2015 AWMPs or implementation of EWMPs, should not be allowed to delay compliance for an additional five years.

* * *

Thank you again for the opportunity to provide comments on the Public Review Draft. We look forward to continuing to work with the EO Agencies to implement the California Water Action Plan and achieve the executive order's vision of "making water conservation a California way of life."

Sincerely,



Ben Chou
Policy Analyst, Water Program
Natural Resources Defense Council



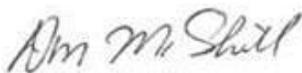
Kelsey Hinton
Program Associate
Community Water Center



Peter Vorster
Hydrogeographer
The Bay Institute



Steve Shimek
Executive Director
Monterey Coastkeeper



Don McEnhill
Executive Director & Riverkeeper
Russian Riverkeeper

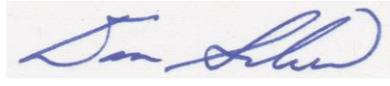


Sara Aminzadeh
Executive Director
California Coastkeeper Alliance

⁴⁵ Public Review Draft, p. 3-25.



Kira Redmond
Executive Director
Santa Barbara Channelkeeper



Dan Silver
Executive Director
Endangered Habitats League



Jennifer Clary
Water Program Manager
Clean Water Action California



Heather Cooley
Water Program Director
Pacific Institute



Caryn Mandelbaum
Staff Attorney & Water Program Director
Environment Now