



ucsusa.org Two Brattle Square, Cambridge, MA 02138-3780 t 617.547.5552 f 617.864.9405
 1825 K Street NW, Suite 800, Washington, DC 20006-1232 t 202.223.6133 f 202.223.6162
 500 12th Street, Suite 340, Oakland, CA 94607-4087 t 510.843.1872 f 510.843.3785
 One North LaSalle Street, Suite 1904, Chicago, IL 60602-4064 t 312.578.1750 f 312.578.1751

[December 7, 2016]

California Water Commission
 Submitted by email to: WSIPComments@cwcc.ca.gov

California Water Commission
 P.O. Box 924836
 Sacramento, CA 94236

Re: Comments on the Water Storage Investment Program Quantification Final Regulations
 Specific to the Incorporation of Climate Change

[Dear Chair Byrne and Water Commissioners,]

Thank you for the opportunity to comment on the final Water Storage Investment Program (WSIP) Quantification Regulations. As you know, we have been actively engaged in your process, submitting comments on the draft regulations, attending public meetings and speaking directly with Department of Water Resources (DWR) staff. We appreciate the Commission's efforts on the WSIP regulations, and find the final regulations greatly improved from early drafts, particularly in terms of the incorporation of climate change.

Nevertheless, it is critically important that the regulations include a scientifically-defensible approach to incorporating climate change impacts, as the projects funded through this program are required to provide public benefits *over their entire lifetime*, which may be well into the next century. Additionally, we understand *the approach to climate change taken here may be applied to other state programs*, including implementation of the Sustainable Groundwater Management Act (as stated in DWR's Water Budget Best Management Practice).

We are pleased with the development of quantitative information for an "uncertainty analysis" that reflects more severe or stressful climatic conditions than those considered in the sections of the regulations associated with monetizing the public benefit. In particular, we commend DWR for different, and scientifically-sound, methodological approach to the uncertainty analysis section. The new approach models each global warming emissions scenario separately. This means that hotter and cooler scenarios are treated separately, as two separate possible futures, which is in line with scientific best practice and state guidance.

Unfortunately, there are three remaining problems that need to be addressed in order to be scientifically-defensible and provide the Commission with adequate information to quantify the resiliency of projects to climate change. The first problem is that **there is an un-scientific approach taken to quantifying climate change impacts in Section 6004 (a)(4) that is at odds with the body of scientific research and state guidance**. As such, it represents a

dangerous precedent for other state planning processes and policies. The second problem is that while DWR is providing useful data for applicants to consider more stressful future climate conditions, **applicants are not required to quantitatively demonstrate how the project responds to more severe climate conditions.** The third problem is **the final definition of resilience is extremely similar to the definition of “water system improvement” in earlier versions of the regulations.** Water supply improvements were removed from the final regulations because they represent non-public water benefits that cannot be funded through Proposition 1. **We are concerned that the new definition of resiliency would reintroduce non-public benefits under the guise of responding to uncertainty.**

Un-scientific approach to a portion of the climate change analysis

The revised regulations include two different methodological approaches to analyzing climate change impacts, one of which is scientifically-sound and one of which is not:

- **The first approach, which is not scientifically-sound, averages together the two global warming emissions scenarios** for the purposes of monetizing public benefits in Section 6004 (a)(4).
- **The second approach is scientifically sound and follows state guidance and scientific best practice, treating the two global emissions scenarios as two separate possible futures** for the purposes of conducting an “uncertainty analysis” in Section 6004 (a)(8).

The state-funded California climate change portal, Cal-Adapt, explicitly warns climate data users to avoid averaging two emissions scenarios. In particular, it notes that averaging together the emissions scenarios **does not** give you a more likely scenario (see Cal-Adapt Website: <http://beta.cal-adapt.org/resources/using-climate-projections>), rather it dilutes the results of both.

It continues to be our recommendation to ask DWR to re-run the analysis used in the monetization of public benefits using the same data that they already have, but separating the two emissions scenarios.

In addition, the final regulations refer to an entirely re-written Appendix A: Climate change and sea level rise, which raises additional methodological concerns. Some specific problems are called out below:

Table A.1 on pg. A-5 reflects the precipitation change (and also considering temperature). This new information reveals that the precipitation for CNRM-CM5 raises a red flag as it is 5 times wetter than the other models, during a period that should have some predictability. This begs the question: What were the criteria used to select these models? This model will skew the statistics towards a wetter future.

In Step 2 on pg. A-7 there should only be 10 simulations to average during this period because there is only one scenario per model. Instead, the documentation refers to 20 simulations, which means that both emissions scenarios were averaged, see the first problem described above.

In Step 4 on pg. A-8, the HADGEM ES model does not appear to represent an extreme change in terms of drier conditions, as it is only about twice as dry as the other models. In other words, this relatively mild dry scenario is being used to represent an “extreme level of climate change,” underestimating the impacts of longer and more severe droughts.

No requirement to quantitatively evaluate climate resiliency

The final regulations incorporate climate science into the calculation of public benefits in a way that is likely to underestimate the impacts of more severe, or stressful, conditions on the provision of public benefits. The revised regulations actually admit this flaw by including a separate section that asks applicants to examine how sensitive their project is to more severe conditions than those modeled for the monetization processes (see Section 6004 (a)(8)).

DWR has provided information for applicants to quantitatively assess the resiliency of their projects to these more severe conditions. Right now, applicants can choose to ignore this information and qualitatively describe, rather than quantitatively demonstrate, how resilient a project is to climate stress. This is inadequate to provide the Commission with the information necessary to *quantitatively* score how resilient a project is to a range of future climate conditions, as required in Section 6008.

New definition of resilience opens the door to public dollars paying for private benefits

The final regulations provide a new definition of resiliency that does not match the definitions of resiliency provided in other state planning documents, including Safeguarding California, or peer-reviewed reports such as the Intergovernmental Panel on Climate Change’s assessments. Nor does it specifically require project proponents or the Water Commission to consider climate resilience. Climate resilience is commonly defined as the capacity to: (1) absorb stresses and maintain function in the face of climate change and (2) adapt, reorganize, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts.

The new definition of resiliency instead refers to more “flexibility and integration to the State water system.” These concepts are not defined but are extremely similar to the definition of “water system improvement” in earlier versions of the regulations. In fact, the language is almost identical: “water system improvements including regional and State system reliability; flexibility through integration.” Water supply improvements were removed from the final regulations because they represent non-public water benefits that cannot be funded through Proposition 1. We are extremely concerned that the new definition of resiliency would reintroduce these non-public benefits under the guise of responding to uncertainty.

In conclusion, based on the final draft of the regulations, it is unclear whether projects funded by the water bond will have the capacity to maintain function in the face of climate change and deliver the benefits for which the public has paid. We ask that you revisit these regulations and make changes to Section 6004 (a) and the definition of resiliency in order to comport with science, and ensure that expensive investments in infrastructure projects are designed to deliver real public benefits that will protect the economy, health and safety of current and future Californians. We are happy to provide additional information on any of the points included in this letter, if desired.

Sincerely,

A handwritten signature in black ink, appearing to read "Juliet Christian-Smith". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

Juliet Christian-Smith, Ph.D.
Senior Climate Scientist
Union of Concerned Scientists
500 12th Street, Suite 340
Oakland, CA 94607