

[December 9, 2015]

Joseph Byrne, Chair  
California Water Commission  
Department of Water Resources  
1416 Ninth St.  
Sacramento, CA 95814

Re: Comments on draft regulations for Proposition 1, Chapter 8

[Dear Chair Byrne,]

Thank you for the opportunity to comment on the Water Storage Investment Program regulations (pursuant to Chapter 8 of Proposition 1). As scientists who have worked extensively on water issues in California, we are pleased to see changes to the initial draft regulations to incorporate climate change into the Commission's assessment of public benefits. In particular, we fully support the requirement that credible, climate scenarios and adaptation measures are incorporated in proposals for projects that are seeking public funds under Proposition 1.

Our previous letter (dated November 13, 2015) explains why climate science is critical to assess large public investments in long-lived water infrastructure proposals. This letter is focused on the revised November 24, 2015 regulations. As previously noted, we strongly support the inclusion of the best available climate science in the quantification of public benefits (Section 6004). We have several minor recommendations in order to:

- Ensure that project proponents are providing information that will help the Commission understand how the project would operate under extremes – both wetter and drier futures, rather than a “median” approach,
- Ensure that the time frame of without-project future conditions matches the planning horizon used to monetize project benefits, and
- Ensure the project proponents understand how to access the best available climate science.

Below, we will briefly describe amendments to accomplish the three goals above.

**Goal 1: Ensure that project proponents are providing information that will help the Commission understand how the project would operate under extremes**

At the last Commission meeting, several Commissioners spoke to their concerns regarding climate extremes – or the impacts of significantly wetter and significantly drier conditions. An analysis based on more extreme projections, rather than median projections, provide a “stress-test” approach to considering how future climate extremes may affect water resources and water projects. Indeed, DWR’s Climate Change Technical Advisory Group’s *Perspectives and Guidance for Climate Change Analysis* (August 2015) recommends that water planning processes utilize a “stress test framework” to analyze the impact of future climate conditions on water resources:

“A stress-test approach using scenarios of constructed extreme events along with analyses of vulnerability to these events, offers a vehicle to assess extremes in a planning process... Stress tests focus on identifying weaknesses and breaking points to the water system that stem from different facets of extreme events” (DWR Climate Change Technical Advisory Committee 2015, pgs. 41-42. Online at: [http://www.water.ca.gov/climatechange/docs/2015/Perspectives\\_Guidance\\_Climate\\_Change\\_Analysis.pdf](http://www.water.ca.gov/climatechange/docs/2015/Perspectives_Guidance_Climate_Change_Analysis.pdf)).

Utilizing a stress-test approach is common in many other sectors.

“For many decision-makers, low-probability, high-impact climate events matter as much, if not more, than those futures most likely to occur. Nuclear safety officials, for example, must consider worst-case scenarios and design reactors to prevent the kind of catastrophic impacts that would result. National security planners, public health officials, and financial regulators are likewise concerned with ‘tail risks’. Most decision-makers will not make day-to-day decisions with these catastrophic risks in mind, but for those with little appetite for risk and high potential for damage, the potential for catastrophic outcomes is a data point they cannot afford to ignore.” (American Climate Prospectus 2014. Online at: [https://gspp.berkeley.edu/assets/uploads/research/pdf/American\\_Climate\\_Prospectus.pdf](https://gspp.berkeley.edu/assets/uploads/research/pdf/American_Climate_Prospectus.pdf)).

Similarly, we know that water infrastructure should not be designed for normal conditions but extreme ones (for instance, the frequent use of the 100-year flood return interval in hydrology and engineering). In summary, responsible allocation of public funds for investments in critical, long-lived water infrastructure in California should take a stress-test approach, as recommended by DWR’s Climate Change Technical Advisory Group. UCS recommends adapting the existing language in Section 6004 (a)(8) to improve Section 6004 (a)(1)(C).

**Goal 2: Ensure that the time frame of without-project future conditions matches the planning horizon used to monetize project benefits**

Section 6004 (a)(4) requires proposals to monetize the value of project benefits. Project proponents are instructed to do so over the planning horizon, which is defined as “the expected life of the proposed project in years plus the construction period, or 100 years, whichever is less” (Section 6004 (a)(4)(B)). While project benefits may be quantified over a period of 100 years, Section 6004 (a)(1)(C) asks project proponents to utilize climate projections that only depict conditions out to mid-century and states that: “After 2050, climate conditions shall be assumed to remain at 2050 conditions.”

There is a clear mismatch between these different sections of the regulations. There are potentially two ways to address this mis-match: 1) the regulations could require that all climate change projections and benefits be limited to mid-century, or 2) the regulations could require that climate projections match the project planning horizon. In the second case, language in Section 6004 (a)(8) could be easily adapted to reflect two categories of projects: those with a planning horizon that stops at year 2065 and those with a planning horizon that goes beyond year 2065.

**Goal 3: Ensure the project proponents understand how to incorporate best available science into existing modeling platforms**

UCS recommends that the Commission provide detailed technical guidance for project proponents regarding how to utilize the state’s climate change data portal, Cal-Adapt.org, to run the scenarios included in the regulations. The Cal-Adapt website is currently being updated to include the scenarios described in the draft regulations. With appropriate instructions, it should be straight-forward to download relevant data at the statewide or project scale from this free and publically-accessible website.

Sincerely,



Dr. Juliet Christian-Smith,  
California Climate Scientist