UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

CENTER FOR WATER-ENERGY EFFICIENCY
TEL (530) 754-5439
FAX (530) 752-6572

215 SAGE STREET, SUITE 200
DAVIS, CALIFORNIA 95616

California Air Resource Board
California Climate Investments

May 15, 2018

RE: UC Davis CWEE Comments on the 2018 Draft Revised Funding Guidelines

To whom it may concern:

Thank you for the opportunity to comment on the California Air Resources Board (CARB) 2018 Draft Revised Funding Guidelines.

The UC Davis Center for Water-Energy Efficiency (CWEE) recommends that CARB provide specific guidance on reporting and quantification methods that meet statutory requirements for programs designed to achieve cold-water savings. Such guidance would enable administering agencies to design programs that incentivize the state's water agencies to further develop effective water conservation programs, which inherently provide the co-benefits of energy and greenhouse gas (GHG) emissions savings. Ultimately, such guidance would enable water conservation programs to be included in the portfolio of projects funded by Greenhouse Gas Revolving Funds (GGRF).

Our recently published study on the estimated statewide impact of California's urban water conservation mandate on electricity consumption and GHG emissions provides evidence that water conservation results in significant savings in energy, cost, and greenhouse gas emissions. We found that over the approximately one-year period that the governor's mandated 25% urban water use reduction was enforced, the savings amounted to 524,000 million gallons of water (a 24.5% reduction relative to the 2013 baseline and assumed to be 100% cold-water savings), with additional co-benefit reductions associated with reduced operations of urban water infrastructure systems including 1,830 gigawatt hours total electricity savings, and 521,000 metric tonnes of carbon dioxide equivalent GHG emissions savings (see Figure 1). For comparison, we found the total electricity savings linked to water conservation are approximately 11% greater than the savings achieved by the investor-owned electricity utilities' efficiency programs for roughly the same time period (see Figure 2), and the GHG savings represent the equivalent of taking about 111,000 cars off the road for a year. These indirect, large-scale electricity and GHG savings were achieved at costs that were competitive with existing GGRF funded programs that target electricity and GHG savings (see Figure 3). For specific details regarding this study please visit: https://cwee.ucdavis.edu/water-conservation-impact.

Our study results provide strong support that direct cold-water conservation is a viable method for reducing GHG emissions and should be included in the portfolio of program and technology options funded by the GGRF. The 2018 Draft Guidelines lists CARB as responsible for developing guidance on quantification methodologies for the administering agencies per the process outlined for how agencies should design new programs. We recommend that CARB engage with administering agencies that propose to fund cold-water savings related programs and provide guidance on quantification methodologies.

Without CARB directed guidance on an acceptable method of quantifying and reporting water system related GHG emissions, water agencies will continue to be denied credit for the GHG savings they achieve. As a

result, many effective water conservation programs under consideration across the state, where funding is often a limiting factor, may not be actualized.

CWEE respectfully requests that CARB take steps to enable the realization of these effective programs.

Thank you for considering our comments.

Sincerely,

Kendra Olmos

Kendra Olmos
Executive Director
Center for Water-Energy Efficiency
(530) 752-5439
kcolmos@ucdavis.edu

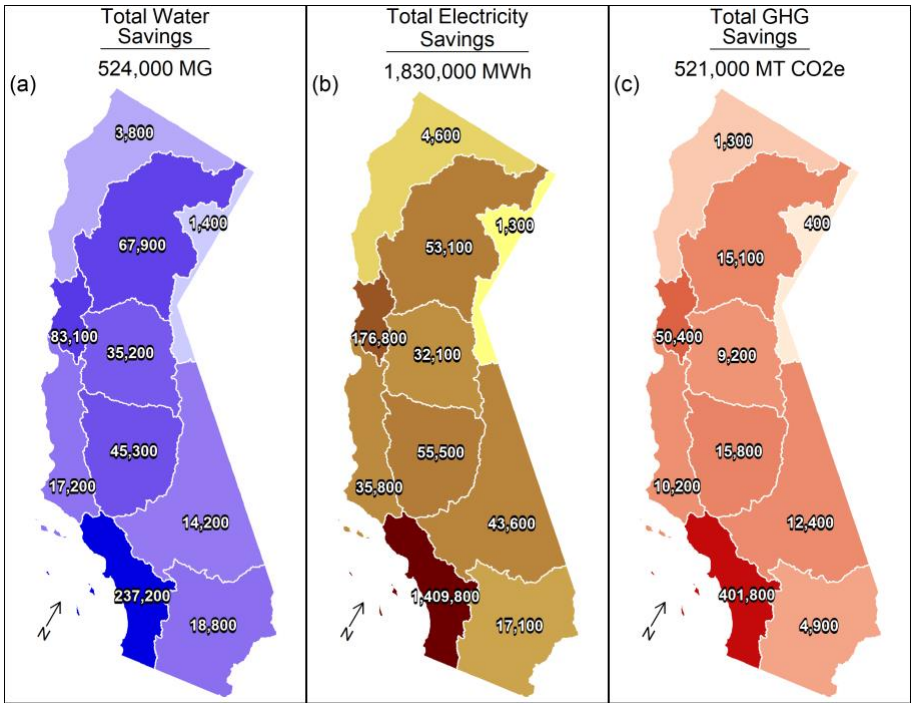

Figure 1: Observed "cold-water" water savings and associated embedded energy and GHG savings, per state hydrologic zone due to water conservation.

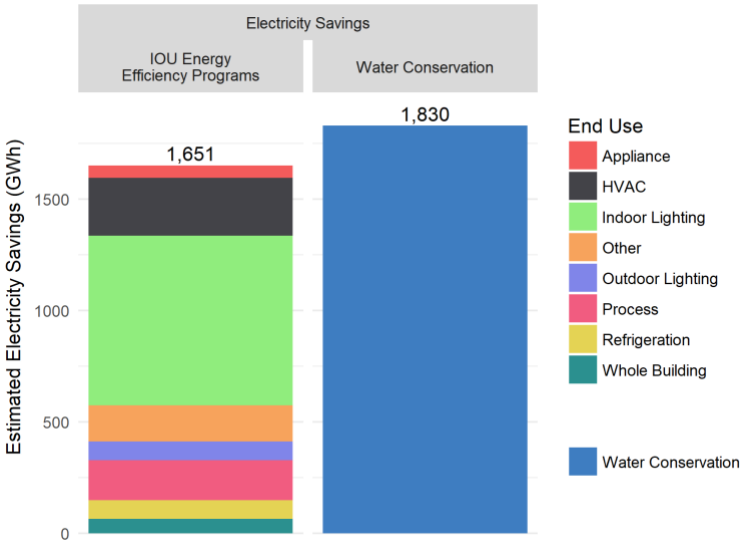

Figure 2: Electricity savings from investor-owned utility energy efficiency programs (July 2015-June 2016) by end-use category verses estimated electricity savings from total statewide water conservation (June 2015-May 2016).

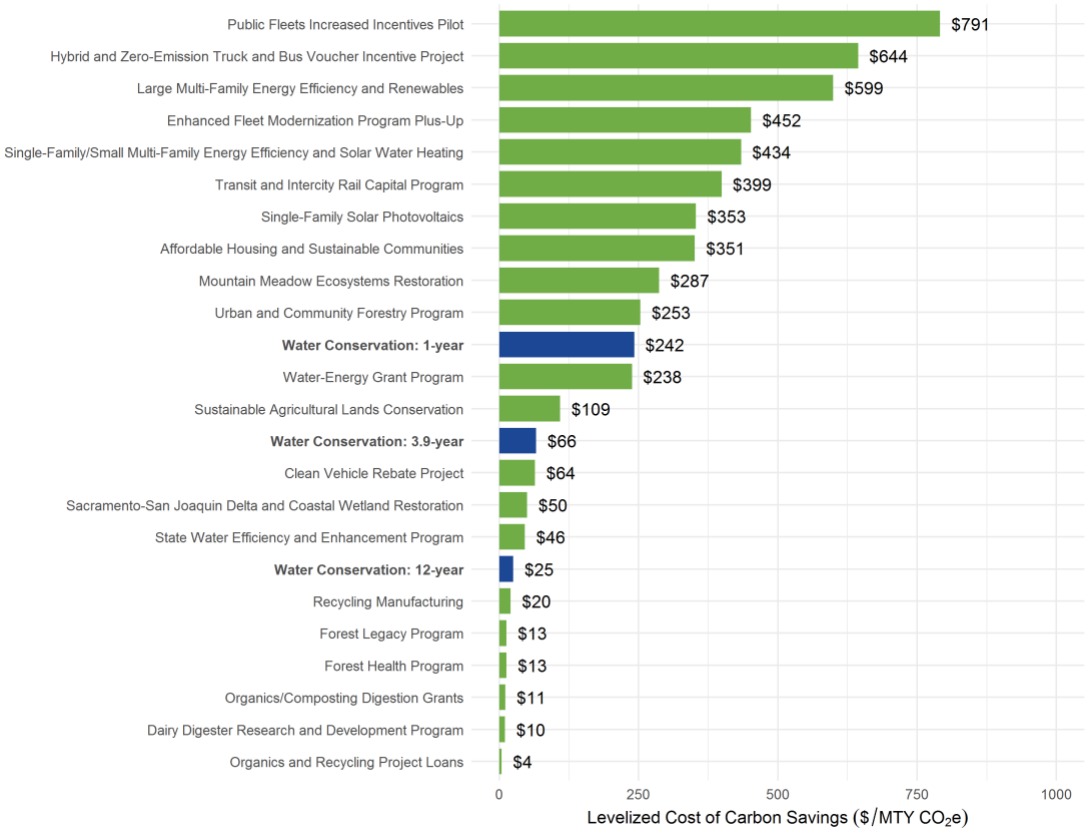

Figure 3: Comparing the levelized cost of saved GHG emissions achieved through statewide water conservation relative to GGRF program investments. The persistence of the water savings resulting from the governor's mandate is yet unknown and therefore shown for three different potential time periods.