



January 4, 2017

To: the State Water Resources Control Board
Concerning: The Bay Delta Water Plan SED

My name is Leah Rogers. Like many people in this room I think about water a great deal. I have a Ph.D. in groundwater from Stanford's School of Earth Sciences and I worked for 3 decades in the field of groundwater and water resources at Lawrence Livermore National Lab.

I wish to support the direction the State Water Resources Control Board is taking to allow as much water as possible to flow in our rivers. I view our rivers as canaries in our coal mine. If they don't thrive, we don't thrive. And as many have pointed out, a healthy riparian ecosystem is vital.

Also when rivers are healthy, they are making continuing investments in our future by recharging our groundwater systems. And it is our groundwater in California, estimated to be about 25 times the volume of surface water, that will be a strategic buffer, our collective savings, in a scenario of warming climate.

I have a couple of questions about the Socioeconomic modeling report presented by the Brattle Group to the SFPUC that has been submitted as supporting your decisions.

1) Where is the matching of the modeling to historical data?

I have done a great deal of predictive modeling in my work and we always like to see what we call history matching, or comparing models to the past data as well as to the future as it unfolds. It would be very useful to see the Brattle Group present such history matching.

Specifically, the socioeconomic models presented to the SFPU in this 2014 report need to be updated to incorporate the last two years, 2014-2016. Certainly, we did not see the dire economic impacts that were predicted in the 2014 report despite water conservation levels in our communities of between 30 and 40%.

2) How do the coefficients of elasticity incorporate the economic benefits of water conservation?

Also the report needs to be more transparent about how the models address water conservation. One mechanism that I believe is undervalued is that when we save water, we save energy and thus we save money. In California we spend about 20% of our energy moving water to thirstier parts of the state. But if we conserve water,

we have more energy and more money to invest in other aspects of our economy and culture.

Also the coefficient of elasticity used in the modeling presented by the Brattle Group defined the economic welfare loss as what people would spend to avoid water rationing. Instead of people avoiding water rationing, I saw our evolution towards being wiser in our usage. I believe we have plenty of room to continue evolving in our water conservation.

By way of a confession, I drove a car in college that got 7 miles per gallon. I wouldn't do that now. We have more efficient options. It may take another decade or two, but I believe we will all have a number like that in the forefront of our awareness about how much water we are using per day, how much water that T-shirt took to make or that steak took to get to our table.

In conclusion, it does not appear that the current Brattle Group models give our communities credit for our evolution in water conservation nor have they addressed at this point how their models did in matching the last two years of our water conservation efforts in California.