

SOUTHERN SIERRA PARTNERSHIP



Honorable Assembly Men and Women
Assembly Water, Parks and Wildlife Committee
California State Assembly

8/21/2013

Dear Honorable Assembly-Members:

Thank you for the opportunity to comment on your effort to develop the “2013 Water Bond Framework”. Public investment in water resources is imperative if we are to meet the needs of 21st Century Californians. Several factors, which I will briefly expound upon, contribute to the disproportionate need for water resource investment in the Southern Sierra Nevada region.

The statistics of our region tell a story of high population growth, high ethnic diversity and low educational attainmentⁱ; a citizenry without access to fundamental rights as Californians and United States citizens – clean water and clean air. The challenges created within this demographic context are exacerbated by natural resource degradation.

Despite these resource challenges, the eight-county San Joaquin Valley region’s population is expected to increase by 69% between 2010 and 2050.ⁱⁱ The tremendous growth our region has seen, and is expected to see, will undoubtedly push our water infrastructure beyond its breaking point unless dramatic steps are taken to halt further depletion of the resource.

State and Federal investment in land and water conservation and management is dwindling at a drastically inopportune time. Proposition 84 has been an unequivocal success; however, much work remains to be done and the successes of Prop 84 cannot be sustained without continued financial support in the form of a new Water Bond. Four of the resource categories contemplated in the Water Bond Working Group’s “2013 Water Bond Framework” are vital to the sustainability of our region – 1) Water Quality, 2) Protecting Rivers, Lakes and Watersheds, 3) Climate Change Preparedness and Regional Self-Reliance for Water, and 4) Storage for Climate Change. I will briefly describe the challenges we face within the context of these four categories.

Water Quality

Remaining groundwater supplies in many of our rural communities are increasingly contaminated. A 2005 study found that fresh water in deep aquifers is giving way to water with high salt concentrations, making these supplies “less suitable for drinking or irrigation water purposes.” Closer to the surface, nitrates and two commonly-used pesticides are becoming increasingly common in the groundwater of the Eastern San Joaquin Valley. Based on these findings, and the region’s history of agricultural chemical use, it is expected that nitrate and pesticide concentrations, compounded by overdrafting of groundwater—will increase over time.ⁱⁱⁱ

Furthermore, the region is vulnerable to fluctuations in the water supply because of its reliance on imported water and groundwater pumping. This was dramatically illustrated in 2009, when a combination of drought and pumping restrictions reduced the amount of water available in the western portions of Fresno, Kings and Kern Counties. From 2008 to 2009, the combined number of harvested acres in these counties fell by nearly 231,000. An estimated \$343 million to \$368 million in agricultural revenue was lost, as were more than 5,500 jobs. This may not be a unique event, as erratic weather patterns and ongoing climate change suggest that water supplies could become less reliable over time.^{iv}

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Protecting Rivers, Lakes and Watersheds

Our region cannot rely on imported water, and under the status quo, will eventually run out of usable groundwater. As a result, farms, cities and reservoirs will depend on water from precipitation and runoff. Much of this water falls as snow in the Sierra: the average annual water yield can be between 7 and 13 acre-feet in the mountains, but rarely exceeds 3 acre-feet on the Valley floor. Melted snowpack and other runoff from the mountains is collected by watersheds, including those that feed the Kings, Kaweah and Kern Rivers, and brought to the Valley floor. However, with climate change, the snowpack is expected to diminish with dramatic consequences for downstream water users.

Land conservation is a critical component of a diversified water management approach. Rivers and streams offer natural connectivity (and resource conveyance) between the high elevation, federally managed lands in the Sierra and the fertile farmland on the Valley floor. Protection of rivers, lakes and watersheds, and important groundwater recharge areas in lower-elevation river basins maximizes the amount of water the region receives from the Sierra. If managed to avoid overuse, this water could also help the region to replenish its rapidly-declining groundwater supplies.

Climate Change Preparedness and Regional Self-Reliance for Water

Our region is rapidly depleting its once-abundant groundwater supplies. A 2008 U.S. Geological Survey report found that withdrawal of groundwater for agricultural use has “greatly exceeded natural recharge and resulted in large water-level declines” – a problem compounded by the use of groundwater to meet urban water demand.^v From 1962 to 2003, groundwater in the Central Valley was lost at an average rate of approximately 1,900 cubic feet per second.^{vi} Overpumping continued in the past decade: from October 2003 to March 2010, groundwater levels in the Central Valley declined by approximately 20.4 mm (0.8 inches) per year.^{vii} The total volume of groundwater lost was 20.3 cubic kilometers. This translates to 16.5 million acre-feet or 20.3 trillion gallons—over three times the total water volume of the San Francisco Bay at mean tide.^{viii}

Due in part to evaporation, runoff and other outflows, the 10 to 15 million acre-feet of water that the region’s farms and cities consume each year are largely derived from imported water and groundwater.^{ix} In the Eastern San Joaquin Valley, local surface water, including water flowing from the Sierra, provides 52.6% of the water supply, groundwater provides 32.6%, and 14.8% is imported.^x In the Western San Joaquin Valley, more than 85% of the water supply is imported by the State Water Project and the Central Valley Project, and two thirds of the remainder comes from groundwater.

Storage for Climate Change

Water management going forward will require inter-agency coordination across state and federal jurisdictions and this collaboration is paramount to ensure that the decisions made in forests and parks and at the headwaters of the region’s rivers, translate to desirable and efficient outcomes for downstream water users.

Increases in temperature and changes in precipitation, hydrology and snowpack have already been observed. There is growing recognition that global climate change will affect long-term management options for the conservation of the region’s resources. This part of California continues to attract new residents, rapidly expanding the region’s wildland-urban interface. Air pollution is a severe and chronic problem, particularly in the southern half where ozone levels regularly exceed EPA standards at mid-elevation locations. Fire management and other land use decisions during the early to middle 20th Century have severely altered the

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structure, composition, and fire regimes of selected plant communities. All of these agents of change interact with one another, and affect ecosystems in ways requiring that land managers' responses be planned and executed at broad spatial and temporal scales. In addition, disinvestment in scientific research is occurring at a time when these complex, synergistic environmental factors are at play with unknown implications for the future.

Moreover, the region's leading economic sector – agriculture and closely associated industries – is the most vulnerable to climate change because of its dependence on sufficient water resources for grazing, forage quantity and quality, particular temperature regimes for crops and livestock, and the absence of extreme events (e.g., droughts or floods). In particular, smaller farmers and those with less diverse crop and livestock systems and limited resources to invest in adaptive technologies will be most vulnerable to climate change.

Conclusion

Despite the aforementioned challenges, our region offers incredible opportunity to see high return on investment in water resources. Our region has globally significant agricultural, water and recreational resources; however, it does not garner the attention commensurate with these attributes. A new Water Bond will address this fiscal disparity and secure a more prosperous future for all Californians.

On behalf of the Southern Sierra Integrated Regional Water Management Group, the Southern Sierra Partnership, and Sequoia Riverlands Trust, I commend your work on the *Water Bond Framework*. I encourage you or your staff to contact me if I can provide any data or references to augment what I have described in this letter or to assist you as you debate this issue with your colleagues in state government.

Sincerely,

Chris Moi
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Sequoia Riverlands Trust

ⁱ <http://www.brookings.edu/~media/programs/metro/fresno.pdf>

ⁱⁱ http://www.valleyblueprint.org/files/San%20Joaquin%20Valley%20Demographic%20Forecasts%20-%20Final%2027%20Mar%202012_0.pdf

ⁱⁱⁱ Burow et al., 2008.

^{iv} Michael et al., 2010.

^v Reilly et al., 2008.

^{vi} Ibid.

^{vii} Famiglietti et al., 2011. The total volume of the San Francisco Bay at mean tide has been estimated to be more than 5 million acre feet. San Francisco Estuary Project, 1999.

^{viii} Ibid.

^{ix} DWR, 2009; Michael et al., 2010.

^x Michael et al., 2010.