



June 30, 2022

Via email

Steve Brandt, Chair, and members
Delta Independent Science Board
715 P Street, 15-300
Sacramento, CA 95814

Re: Legislature approves audit of 2021 runoff forecasts and drought preparation by DWR and the Water Board

Dear Chair Brandt and Delta Independent Science Board members:

I wanted to thank Dr. Lund and the Delta ISB for the timely and well thought out Water Supply Reliability Review. The review is an essential first step for state, federal, and local agencies to begin to grapple with the reality of the impacts of climate change on the California water sector. Dr. Lund and Dr. Holzer also gave an amazingly accessible presentation to the Delta Stewardship Council on June 23, which is now up on Maven's notebook. I have been sharing it widely with the stakeholders I work with.

However, there was a dramatic development on Monday, June 27. The California legislature voted for the California State Auditor's office to audit the 2021 runoff forecasts and drought preparation by the Department of Water Resources and the State Water Resources Control Board.

I do think the need for an audit by the State Auditor's office indicates a systemic issue in the independent review of agency modeling and the use of best available science on climate change, which is partly the charge of the Delta ISB. I therefore wanted to provide more information on the audit for your consideration.

As I wrote to the Delta ISB on January 12, 2022, there have been major scientific, technical, and legal controversies regarding operations of the State Water Project and the Central Valley Project, and the challenges of managing the system to meet ecosystem needs during the drought. As I stated in my letter:

In 2021, the runoff forecasts by the Department of Water Resources were disastrously wrong, and the Department of Water Resources ("DWR") and the US Bureau of Reclamation ("USBR") filed a Temporary Urgency Change Petition requesting relaxation of environmental flow requirements in the Bay-Delta Water Quality Control Plan.

California Water Research filed a protest requesting "that the State Water Resources Control Board require a written report by DWR and USBR on the methodology used for

the runoff forecast used in this year's Drought Contingency Plans, together with an evaluation of the reasons for the errors in this year's runoff forecast." The Board did not require such a report, and there was no independent review of the runoff forecasting methodology.

On June 27, 2022, the Joint Legislative Audit Committee voted unanimously to audit DWR's preparation for the 2021 drought. Assemblymember Adam Gray requested the audit. He told the Audit Committee:

In stark contrast to the advances made in higher priority policy areas. California's water management strategies are outdated, heavily flawed, increasingly dangerous to the health of humans and the environment alike.... ...

Put simply, members, everyone from the Sierra Club and the NRDC to ACWA and the Farm Bureau have an interest in getting this information as close to right as possible after the errors became public. DWR is quick to point out that their runoff forecasts are based on historical data, and of course, historical data becomes less accurate as the effects of climate change grow increasingly real. Last year, they promised to embrace new technology and update the models going forward.

The problem with that explanation is that climate change is not new. Last year was not the first time DWR's forecasts were wrong. In fact, researchers have been [calling on] DWR to fix their broken forecasting algorithms since the 1990s and DWR and the State Water Board have held dozens of public workshops to discuss these issues.

This is what the Acting State Auditor said he was going to investigate:

As Mr. Gray indicated, he's requesting an audit of the management of surface water by the Department of Water Resources and the State Water Resources Control Board. So the scope of the audit would include really identifying the procedures that DWR and the State Water Resources Control Board used to prepare for the 2021 drought. And part of that would be really evaluating the accuracy of the model by comparing DWR's projections of how much water would be captured with what was actually captured. We'd also quantify any differences and the reasons for those differences, and probably more importantly, identify any actions that DWR has taken to improve the accuracy of those predictive models.

... And we'd also review the State's plan to uphold the contractual obligations to maintain the salinity standards in the Sacramento-San Joaquin Delta and to provide adequate flows to sustain native fish populations... We estimate this audit would take about 2900 hours to complete, and that equates to about six or nine months. I'm sorry, 6 to 7 months.

The full statements to the Audit Committee are posted on my blog here:

[Legislature approves audit of water management by DWR and SWRCB during 2021.](#) June 28, 2022.

Assemblymember Gray's audit request was based in part on some of my blog posts.

[In increasing State Water Project allocations, DWR is taking huge risks.](#) January 20, 2022.

[Dear DWR, in runoff forecasting, stationarity is dead.](#) February 17, 2022.

[Fatal errors in DWR's runoff forecasting: comments to the State Water Resources Control Board.](#) March 18, 2022.

My blog post about the audit request is here:

[Models that forecast water that isn't there hurt all beneficial uses.](#) March 28, 2022.

As the Delta ISB thinks about revising its operating guidelines, I wanted to suggest that the members think about the Delta ISB's conclusion in May that hydrologic modeling did not need review. My understanding is that this conclusion was based on reports prepared under the direction of the Delta Science Program, in collaboration with modelers from the Department of Water Resources and the State Water Resources Control Board.

While there are many positive aspects to collaborative agency processes, in my experience over the past decade, such processes almost universally fail to adequately address inconvenient truths about climate change. This is where independent peer review is critically important, and where I think the role of the Delta ISB is most essential.

As you know, the legislature has mandated that "members of the Delta Independent Science Board... shall exercise their scientific judgment and perform the functions set forth in this section independently from the council." (Wat. Code § 85280(a)(4).) I hope that you might think about this more as the Delta ISB goes forward.

Thanking you again for your service and dedication,



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