

Review of “Economic Analysis of Stage I of the California WaterFix”

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On February 12, 2018, the California Department of Water Resources (DWR) released an “Economic Analysis of Stage I of the California WaterFix” by the Brattle Group. Brattle had previously worked on economic analysis of the two-tunnel WaterFix for DWR. The most recent of these Brattle analyses had found the two-tunnel project was infeasible for agricultural water contractors despite assuming a \$6.5 billion taxpayer of construction costs and other favorable assumptions towards the project. DWR did not release this unfavorable draft of the report, but it did come to public attention through a public records act request.¹ This previous report also discussed a single-tunnel option and concluded that “it would not be worth the associated cost savings” compared to the two-tunnel project that the report had already found could only be justified for ratepayers if there were a massive taxpayer subsidy.

Given this background, it is highly surprising that this latest Brattle analysis found that a single-tunnel version of WaterFix had benefits that narrowly exceed costs without any taxpayer subsidy.² The 2018 Brattle report leaves out key details about study assumptions and disaggregated results that make it difficult to fully understand how the results could have changed so much from their previous analysis of the twin tunnels.³ On March 21, 2018, Restore the Delta sent me a copy of emails between the Metropolitan Water District staff and Brattle Group principal David Sunding that illuminated key assumptions that were either omitted or obscured in the February 2018 report. The emails show staff from the Metropolitan Water

¹ <http://www.restorethedelta.org/wp-content/uploads/2016/09/CA-WaterFix-Economic-Analysis-Sunding.pdf>
<http://www.restorethedelta.org/wp-content/uploads/2016/09/Jeffrey-Michael-on-the-November-2015-Draft-WaterFix-Economic-Analysis.pdf>

² The 2018 analysis does consider the possibility of federally subsidized loans to reduce the costs to water agencies, while ignoring the cost of these subsidies to taxpayers. This is invalid for a comprehensive benefit-cost analysis, and is one of numerous examples where the Brattle’s analysis contradicts professional standards for benefit-cost analysis – including the Department of Water Resources own economic analysis guidelines. It also increased the benefit duration out to the year 2133 and accounted for the Sustainable Groundwater Management Act in agricultural values, but these two changes are unlikely to be substantial enough to change the conclusions from 2016.

³ Key information omitted in the report includes the actual level of water deliveries in the no tunnel and tunnel scenarios, it only shows increments. This hides the fact that water supplies from a single-tunnel alternative are actually lower than the No Action Alternative in the EIR and other official analyses of the WaterFix, and hides the extremely low value of water supplies assumed in the no-tunnel baseline. Other hidden information includes the benefits by categories which obscures that the value of earthquake and water quality benefits are not that high and thus the economics of the project rise and fall on the extent to which it increases water supply.

District and State Water Contractors delivering highly biased modeling scenarios and assumptions to Dr. Sunding in order to boost the estimated water supply benefits of a single-tunnel scenario.

First, the emails show Metropolitan Water District staff providing water scarcity estimates for the no-tunnel scenario based on the “do nothing” scenario from MWD’s latest integrated water management plan. This is a ridiculous assumption that contradicts MWD’s actual board approved “all of the above” plan that includes significant investment in alternative water supplies and conservation even with the WaterFix. This outrageous assumption that the MWD region will actually do less (nothing) to develop alternative water supplies without the tunnels than with the tunnels is not disclosed in the February 2018 report, it only includes undetailed references of comparing WaterFix to an undefined no-tunnel scenario. This assumption serves no purpose other than to greatly inflate the calculated benefits of any incremental water supply from the WaterFix.

Second, the emails reveal that the results delivered by Dr. Sunding in January 2018 still did not have sufficient water supply benefits, despite many biased assumptions, to jshow benefits exceeding costs for all agencies and to deliver incremental water costs as low as desired. On January 30, 2018, Metropolitan’s Tom Philp emails with the news that State Water Contractors will include new water supply scenario that increased incremental water supplies delivered by a single-tunnel to the State Water Project by 21%. Mr. Philp says the change is justified by assuming “successful adaptive management.” These new assumptions, buried in impenetrable technical language in the February 12 report that leaves out the “successful adaptive management” justification, appear to have been critical in boosting the final reports benefit-cost ratio to water agencies above one.

It is important to note that the problems and bias in the report go beyond these two important assumptions dictated to the consultant by MWD and State Water Contractor’s staff. The report is not a benefit-cost report as called for by the Department of Water Resources’s own guidelines and the State Auditor’s review of the WaterFix, because it only reviews benefits and costs to water agencies (which is known as feasibility analysis) rather than take a statewide perspective that includes impacts on other stakeholders and the environment. Despite this clear conflict with its own guidelines, Department of Water Resources has inaccurately called the report a benefit-cost analysis in its public outreach materials.

These two hidden key assumptions mislead the public by comparing the one-tunnel WaterFix to a worse than worst case no-tunnel scenario for water supplies. Specifically, it assumes that without the tunnels water agencies “do nothing” to invest in alternative water supplies even as it assumes environmental restrictions on Delta pumping that far exceed anything proposed for a no-tunnel scenario and even going beyond south Delta restrictions that would be required as a condition for the WaterFix tunnels.

Furthermore, these analytical assumptions deviate substantially from the project description used in DWR’s petition in the water rights hearing before the State Water Resource Control Board, the Environmental Impact Report and Biological Assessment. The SWRCB petitions clearly

describe operating constraints on the south Delta pumps are a component of the WaterFix project. These conditions on the south Delta pumps are requirements for project approval because they offset the environmentally damaging direct effects of the north Delta intakes. The Brattle report invalidly moves those constraints to the no-tunnel scenario to boost the apparent water supplies from building the tunnel. While this no-tunnel scenario is speculative and unlikely, even if true, the analysis is flawed because it ignores the substantial benefits to the environment and other water users that would be generated by this highly restricted no-tunnel scenario. Furthermore, the justification for this no-tunnel assumption is based on future regulatory processes that could also reduce water supply from the WaterFix tunnel. Thus, the report has an unbalanced approach to regulatory risk, assuming it occurs with 100% certainty in the no-tunnel case, and completely ignoring the risk in the case of the tunnels. Thus, it greatly misrepresents the water supply reliability of the tunnels.

If these study assumptions weren't biased enough, the Brattle analysis includes the following additional pro-tunnel assumptions.

- Ignores risk of cost escalation, assumes the \$11 billion project is delivered on-budget, on-time, with no additional regulatory restrictions or delay.
- Assumes 100 years of benefits and a low 3% discount rate, both more optimistic than standard assumptions which further inflates benefits.
- Assumes no improvement in alternative water supply technology for the next 100 years.
- Assumes urban water demand grows in the future significantly faster than recent trends suggest.
- Assumes alarmist earthquake, delta flood scenarios that ignores levee improvements and the substantial public safety and economic risks of a tunnels only approach to addressing flood risk in the delta.

In summary, the Brattle analysis of a one-tunnel project is highly biased and does not comply with the agencies own guidelines and professional standards for benefit-cost analysis. Given the vast expense and controversy of the Delta tunnels, it is imperative that the State of California prepare an independent, peer-reviewed statewide benefit-cost analysis of the tunnels that the public can trust.