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The Governance and Financing of the Bay Delta Conservation Plan: Overview of the Issues
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Successful planning processes integrate economic and financial considerations from the beginning. The BDCP process has been going on for seven years, but it was only last year that it began to include any serious economic or financial analysis. As a result, BDCP is stuck with a set of alternatives that were developed with little regard for economics or financial reality, and it has been unable to develop a viable finance plan or a cost allocation among beneficiaries.

The current BDCP plan provides little value for the steep cost and enormous financial risk it would bring to the ratepayers and taxpayers of California. Fortunately, there isn't a shortage of less costly and effective alternatives to the twin tunnels. At the end of my comments today, I will discuss how the findings from the new BDCP economic analysis are a useful input to designing those alternatives.

The strength of the BDCP economic analysis is that it uses a consistent measure of water demand across alternatives to show how the value of water supplied through the Delta varies across different levels of Delta water exports. He correctly shows that the key to the economics of the tunnels is water supply, and that the tunnels can only be justified if they result in a significant increase in export water supplies. Water quality is a secondary, but important consideration, whereas the value of seismic risk reduction provided by the tunnels is relatively low.

While consistent across alternatives and technically sound in many ways, the BDCP analysis presents a rather aggressive forecast of future demand. In this sense, it is similar to the high-speed rail business plans that used optimistic ridership projections to justify the project. The BDCP uses a 2050 population forecast for the Metropolitan Water District region that is about 5 million people higher than the current forecasts of the California Department of Finance, it makes pessimistic assumptions about water supply alternatives, technology and conservation, and uses a very low discount rate. In fact, the report projects urban water demand will grow faster in the future than it has in recent decades, a result which seems unlikely. It may be a reasonable upper bound, but relying exclusively on high growth projections encourages overspending and is a common cause of financial problems. Fiscal prudence demands that BDCP evaluate the plan under lower growth scenarios.

It is important to note that these two recent economic studies still fall short of a comprehensive benefit-cost analysis of the tunnels. The study in chapter 9 of the BDCP only includes the impacts on the water contractors, whereas the recent statewide economic impact study is more comprehensive but incorrectly comingles the effects of the tunnels with the habitat restoration. Benefit-cost analysis requires independent justification of the tunnels. A valid habitat conservation plan and complying with the ESA does not require the tunnels.

In addition, the BDCP analysis avoids the thorny issue of placing an economic value on the endangered and threatened species that are at the root of the conflict and whose recovery is the primary objective of the habitat conservation plan. While valuing the environment is controversial, it can't be ignored as in these reports. In the case of the BDCP economic analysis, the issue of valuing the fish species can be legitimately avoided if scientists believe the alternatives will have similar success at achieving the recovery objectives for fish. For example, the analysis in the EIR finds that the tunnels evaluated alone have a similar outcome for endangered and threatened fish as the no-action alternative.

Alternatives are the key to both the environmental and economic analysis of the tunnels. Every economic benefit that is presented for the tunnels can only be interpreted relative to an alternative, so it is critical to get the alternatives defined correctly and maintain consistency across the environmental and economic analysis.

The most basic alternative that must be defined is the no action alternative. What happens without the BDCP? For the first 6-7 years of the BDCP process, the no action alternative has been defined as a continuation of operation under the water export constraints of the current biological opinions or Biops. There has been no controversy around this no-action alternative which estimates average water exports at 4.7 maf at the opening of the tunnels, and that the tunnels would allow exports of 4.7 to 5.4 maf, an incremental water yield of 0 to 0.7 maf each year. As discussed earlier, the EIR has shown that the tunnels alone have a similar result for endangered and threatened fish species as the no action alternative, and thus the environmental benefit of the tunnels relative to no action is zero.

Last summer, I wrote a benefit-cost paper that compared the twin tunnels to the EIR no-action alternative, drawing heavily from Dr. Sunding's previous analysis of water supply, water quality and seismic risk reduction benefits. I determined that the net benefit of the tunnels was about -\$7 billion, and the benefit-cost ratio was 0.4. If the BDCP economic analysis used the EIR baseline, they would get a similar result. This was confirmed a few weeks ago at a Metropolitan Water District board meeting when one of the board members asked Dr. Sunding if the tunnels would still be cost-effective if he used the EIR baseline, and he responded "No." In other words, spending \$15 billion to build the tunnels would be worse than the status quo, even from the perspective of the water contractors.

So how does the BDCP generate the conclusion that the tunnels are a good investment? This summer, after seven years of using the Biops as the no-action alternative, BDCP unveiled a new no-action alternative called the "Existing Conveyance" scenario that assumes another 20-25% reduction in water exports compared to the current biological opinions. And just like that, with a controversial last minute change of the no-action assumption, the BDCP generates over one million acre feet of new water supply and over \$10 billion in new water supply benefits. Is this reasonable? One wonders if the BDCP itself believes it since the report warns that this assumption is only used for the economic analysis, and is not for the EIR or in any other BDCP documents.

When we look at the current political and legal environment, does it seem more plausible that biological opinions will become so strong that they will bring exports down to the levels of forty years ago when

the state water project was new? I would argue that the opposite seems at least as likely, that the biological opinions could be weakened to allow for increased exports.

The BDCP applicants are actively litigating the current biological opinions, they argue that they are too restrictive and have had some success in challenging the Biops in federal court. Yet in the BDCP, these same entities and the same experts they use in federal court to fight the current Biops are arguing that future restrictions are certain to be much tougher because the current Biops are not sufficient to recover endangered species. In addition the lawsuits against the biological opinions, numerous bills have been introduced in Congress to weaken the biological opinions and increase pumping, as well as to generally weaken the ESA. On the other hand, I am aware of no similar bills or proposals by regulatory agencies to cut water exports 20-25% below the biological opinions, the scenario BDCP economic studies have described as the most likely outcome.

It is inappropriate to justify a risky \$25 billion project to ratepayers and taxpayers on a wildly speculative assumption about future regulation that directly counters the current direction of state policy and legal action. Moreover, the BDCP economic analysis based on this assumption is still incorrect, because it does not account for the environmental benefits that would result from a no-action alternative that is more protective of fish than the BDCP.

But we need to move beyond a debate about the correct no-action assumption and ask what the results tell us about how the BDCP can be improved. It has been established that the tunnels are a bad investment compared to the current Biops, and are a good investment compared to a possible future where exports are 25% lower than the Biops. This begs the question, what is the break-even point? At what level of future exports would the net benefits of BDCP be zero?

Using the results of the BDCP economic studies, I calculated that a no-tunnel alternative with exports ranging between 3.85 and 4.45 maf results is economically equivalent to the tunnels for the contractors. If exports were increased slightly to 4 to 4.6 maf in this no-tunnel scenario, it would be better for the contractors than the tunnels, better for fish than the current Biops, and also better for Delta stakeholders. It's a win-win-win compared to the tunnel plan. My conclusion from the economic analysis is that BDCP should develop a no-tunnel HCP alternative that maintains the other 19 conservation measures and stabilizes water exports between 4 and 4.6 maf.

The economic analysis also supports other no-tunnel options. The BDCP analysis only looks at one no-tunnel alternative, a version of what is known as the Delta Corridors plan that uses a combination of operable gates, dredging, fish screens and other elements to improve through-Delta conveyance. This option costs \$10 billion less than the twin tunnels, and the BDCP analysis found it had similar net economic benefits to the contractors, a higher benefit-cost ratio for the contractors, and reduced take of most endangered and threatened fish species relative to the twin tunnels. Furthermore, the BDCP economic study made an error in that it omitted the water quality benefits of the separate corridors alternative to the contractors. In contrast, the EIR estimates that it provides greater water quality benefits than dual conveyance since it prevents low quality San Joaquin river water from reaching the pumps, and the corridors concept was initially developed as a water quality solution. If the water

quality analysis is corrected to include \$2-3 billion in additional benefits to the water contractors, the through Delta (separate corridors) alternative makes a second, lower-cost alternative that is clearly superior to the BDCP's preferred twin tunnels plan.

What about the NRDC portfolio proposal? The BDCP analysis rates a 3,000 cfs tunnel alternative poorly, but it is significantly different from the NRDC proposal. First, the BDCP cost estimate is at least \$3 billion more than the portfolio proposal, apparently because the BDCP still utilizes two tunnels, rather than one tunnel for this lower capacity conveyance. In addition, the BDCP analysis doesn't consider all the elements of the portfolio such as alternative water supplies, new storage, and stronger levees.

Another cost-effective alternative that should be examined by the BDCP are seismic levee upgrades as proposed in the Delta Protection Commission Economic Sustainability Plan. Seismic levee upgrades actually provide more earthquake protection for water exports than the twin tunnels. In addition to providing more protection water exports from seismic risk, seismic levee upgrades protect public safety, statewide transportation infrastructure, statewide energy infrastructure, Delta farms and property from earthquake risk at substantially less cost than the tunnels.

Other conveyance alternatives include the Western Delta Intakes Concept credited to Dr. Robert Pyke and Congressman Garamendi's recent proposal. Elements of these lower-cost alternatives could be combined so it isn't hard to envision a dozen realistic, less costly alternatives to the BDCP proposed project that are better for water ratepayers, taxpayers, endangered fish and Delta communities.

In summary, economic analysis of the BDCP clearly shows that the extreme cost and low water yield of the twin tunnels plan cause it to be inferior to a status quo defined by the current biological opinions. In addition, BDCP has been unable to develop a viable cost-allocation or finance plan, and it exposes taxpayers and ratepayers to unnecessary risk. Less costly no-tunnel and small-tunnel portfolio approaches have not been adequately considered by BDCP, and there is ample evidence that several such alternatives are superior to the BDCP's proposed twin tunnels.