CALIFORNIA natural resources AGENCY

**EDMUND G. BROWN JR.,** Governor
**JOHN LAIRD,** Secretary for Natural Resources

September 11, 2013

Dear Chair Wornham and Ms. Stapleton:

Working together, California stands at a precipice not reached in more than 40 years: decisions in the California Delta that will stabilize our water reliability for generations to come. I want to thank the San Diego County Water Authority (SDCWA) for its considerable contribution to that progress, and, in the spirit of transparent and informed public policy, I would also like to detail a framework of issues and processes that yet remain before us.

In January of this year, the SDCWA along with other water agencies and environmental groups asked that a proposal containing a wide variety of elements be considered as an alternative to the proposed Bay Delta Conservation Plan (BDCP). Please find attached an evaluation of the potential of such a concept to meet the co-equals of water supply reliability and ecosystem restoration in the Delta established by the California Legislature in 2009.

While there are many areas of agreement in regard to local water supply development, water use efficiency, storage, and other essential water management strategies, the fundamental premise that cost savings from building a smaller facility could generate funding for substantial and adequate investments in other regional and local water supply to meet California's future water needs does not bear out. That said, the portfolio of water management strategies you identified in January will be the foundation upon which my agency, in collaboration with the California Environmental Protection Agency, and California Department of Food and Agriculture will embark on the development of a broad water action strategy for California. This is also described in more detail in the attached document.

I want to thank the ratepayers, board, and professional staff of the San Diego County Water Authority, for their ongoing financial, policy and technical support of the BDCP and its environmental review documents. After six years of study, and hundreds of millions of dollars of sound science, evaluation, assessment and collaboration, the BDCP has seen its first public release – and is several weeks away from initiating formal public review of a draft proposed plan for environmental actions and infrastructure investments needed to reach the twin goals.

Please do not hesitate to contact me with further questions. I look forward to continuing our work together to meet California's water needs in an efficient and sustainable way.

Sincerely,

John Laird
California Secretary for Natural Resources

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**Portfolio Approach to Statewide Water Management**

**and the Bay Delta Conservation Plan**

September 11, 2013

The Bay Delta Conservation Plan (BDCP) is one effort among many others aimed at developing a broad and sustainable water portfolio for California's water future. The California Natural Resources Agency (CNRA), the California Environmental Protection Agency (Cal EPA) and the California Department of Food and Agriculture (CDFA) are collaborating to develop a statewide approach that identifies specific actions to most efficiently and sustainably manage our water resources statewide.

There are key integrated water management elements that help achieve the co-equal goals of the BDCP, but which are not within the BDCP's specific scope, including:

- Increased water use efficiency and conservation (as mentioned above).
- Increased water supply through storage, desalination, water recycling, and groundwater management.
- Improved operational efficiency through other water conveyance projects, increased Central Valley Project and State Water Project operational efficiencies, and voluntary water transfers/exchanges.
- Ecosystem enhancements throughout California watersheds.

The BDCP is governed by the legislatively-mandated co-equal goals to restore the ecosystem of the Delta and determine what water can be exported in a way that's environmentally sustainable and reliable in the face of an extreme event or disaster made more likely by climate change. The ability of the BDCP to meet these coequal goals is the lynchpin for broader, statewide integrated water management. Without a successful BDCP, the effectiveness of local efforts to improve groundwater management, maintain and improve water quality, and develop recycled water supplies to meet California's water future will be greatly diminished.

The BDCP is significant, because for the first time, and as a direct result of the co-equal goals provided by the Legislature, biological objectives will help determine water deliveries. The water project will meet the stringent requirements of the Endangered Species Act and Natural Community

Conservation Planning Act. State and federal agencies have been working together to define a project that can be permitted within these laws.

The BDCP will be one of the largest and most complex water supply and habitat conservation plans in the nation. Hundreds of millions of dollars have gone into its planning in the form of engineering work, biological studies, economic analyses and water supply modeling. The state Department of Water Resources (DWR) has worked in close partnership with water agencies, environmental groups, scientists, and state and federal fish and wildlife experts to move the plan forward. If the BDCP is to be approved by state and federal fish agencies, the plan must meet the stringent environmental standards of both state and federal law. The current "proposed project" includes, among other things, a new 9,000 -cubic feet per second (cfs) north Delta export facility (three intake structures and two parallel tunnels from near Hood to the state and federal pumps in the South Delta) and 65,000 acres of restored tidal marsh habitat.

**Response to the January, 2013 Portfolio Concept**

In January, 2013, some environmental groups and water agencies asked that a proposal containing a wide variety of elements be considered as an alternative concept to the proposed BDCP project. This "portfolio" proposal includes a new 3,000- cfs north Delta water export facility (one intake structure and a single tunnel), reduced habitat restoration, increased water storage and conservation around the state, funds for Delta levee repairs, and other elements. The proponents of this statewide proposal suggest that it might save the water exporters money, which could be used for more diverse water sources, such as water conservation, wastewater recycling, and other types of water management.

Although the portfolio proposal, with its emphasis on conservation, diversification, and improved storage, has considerable merit from a policy standpoint, the proposal as a package is not practical as an alternative to the BDCP proposed project. The portfolio alternative has four premises. The first two are explicit, while the second two are implicit.

1. It would be cheaper and more cost-effective to build a 3,000- cfs north Delta water export facility with a single tunnel than to build a 9,000- cfs facility with two parallel tunnels.

2. The 3,000- cfs facility, combined with the existing south Delta facilities, could export annually about 1 million acre feet less water than is being exported today. This lost water would be

made up by other water management techniques such as water conservation, wastewater recycling, groundwater management, and additional water storage that are more cost-effective and more protective of the environment than the BDCP proposed project.

3. The biological goals and objectives of BDCP could be met by the "portfolio" alternative, thus fulfilling the requirements of both a Habitat Conservation Plan (HCP) under the federal Endangered Species Act, and a Natural Community Conservation Plan (NCCP) under the California Natural Community Conservation Planning Act. These stringent goals and objectives would be met despite continued very heavy reliance on exports from the south Delta.

4. A smaller Delta water export facility would provide adequate protection against a prolonged inability to export water from the South Delta due to the flooding of Delta islands following an earthquake or major storm.

Each of these premises are examined below.

**1. Premise: It would be cheaper and more cost-effective to build a smaller Delta water export facility.**

From an engineering point of view, redundancy in underground water systems (tunnels) is highly desirable to allow for maintenance and unforeseen outages. The BDCP proposed 9,000- cfs project includes two tunnels in order to provide this redundancy. The portfolio proposal does not provide the desired infrastructure redundancy. If the project were to include two tunnels the cost would be about $1 billion more than the single bore version.

The cost of a 3,000- cfs tunnel would be $8.5 billion. The cost of the 9,000- cfs tunnels would be $14.5 billion. Based on Chapter 9 of the BDCP, water supply from a 3,000- cfs tunnel project would be an average of 4.2 million acre- feet per year. Water supply from a 9,000- cfs project, in contrast, would average at least 4.7 million acre-feet per year.

The substantial reduction in water supply provided by the 3,000- cfs facility would result in a large reduction in economic benefits compared to the larger facility. The economic analysis performed in BDCP Chapter 9 shows that most alternatives to the proposed project have positive benefit cost ratios. But the 3,000- cfs tunnel has a negative benefit cost ratio, largely because the cost of the 3,000- cfs tunnel is approximately two thirds of building the proposed 9,000- cfs twin tunnels but the water yield is much smaller. (Right-of-way and equipment mobilization costs are not much smaller for a small project than for a large one.)

The proposed project would increase the reliability of exports by allowing more flexibility to deliver water from the north Delta when environmental conditions are appropriate, while increasing total average annual exports from 3.5 million acre feet per year (with no project) to 4.7 million acre feet per year even if very high Delta outflows are required to protect sensitive fish species.

*Conclusion: Building a 3,000- cfs tunnel has a benefit/cost ratio of less than 1, and results in a reduction in the Delta water supply of 500,000 acre- feet per year compared to the 9,000- cfs tunnels.*

**2. Premise: spending the money saved on the smaller facility to develop water supply alternatives would be more cost effective than building the larger facility.**

DWR believes that Delta improvements and a wide variety of water supply alternatives will be needed to meet California's future water needs. This is particularly true because climate change will adversely impinge on existing water supplies in a several ways:

• Snowfall in the Sierra will gradually be replaced by rain. The slow and steady snowmelt will be somewhat replaced by immediate rain runoff. The rain will come when reservoirs must be drawn down for flood control, whereas snowmelt allows reservoirs to fill gradually after the flood season is over. These changes will make storage of the rain runoff difficult.

• Less reliable and more variable water supplies will lead to greater demand for groundwater, increasing groundwater overdraft. This trend will gradually lead to a greater demand for surface water supplies as groundwater becomes less affordable.

• The water supply from the Colorado River to Southern California may decline due to climate change and the increasingly erratic precipitation pattern in the Colorado River watershed. Also, demand for Colorado River water by other states in the watershed is increasing.

• If increased rainfall leads to higher peak winter flows in the Central Valley rivers, the U.S. Army Corps of Engineers may increase the flood reservation requirements in the major reservoirs. Such a change in reservoir operations could reduce the water supply, hydroelectric, recreational, cold water pool, and other benefits of the reservoirs.

These impacts, along with increased water demand to relieve groundwater overdraft and to accommodate economic and population growth, are challenges that transcend the BDCP. For that reason, as mentioned above, CNRA, Cal EPA, and CDFA are working to develop a broader statewide action plan. The action plan will also be designed to contribute to achieving the goal of the Delta Reform Act to reduce future reliance on the Delta by making the most efficient use of the existing Delta system.

The portfolio plan calls for a $2 billion investment in water recycling and a $3 billion investment in urban conservation. The proposal also calls for unspecified investments in agricultural conservation. As described above, reducing the size of the tunnels from 9,000 cfs to 3,000 cfs only saves $5 billion while producing less water for export, a lack of redundancy, and fewer economic benefits. Also, many statewide conservation, efficiency, recycling and other water management programs are underway, and while they are not part of the BDCP, they were studied at length in the BDCP Appendix 1C (Demand Management Measures). These water management strategies are already anticipated to contribute to the success of the BDCP and will be addressed in the water action plan.

Investing $3 billion in the most cost effective forms of water conservation and wastewater recycling would not come close to replacing the water supply lost as a result of reducing the size of the tunnels. Water recycling costs are often in the range of $1,000 - $1,500 per acre-foot per year, and sometimes much higher. Conservation is often somewhat less expensive than recycling, but in most urban areas served by the SWP, has a cost of $1,000 per acre-foot and above. Indeed, reviewing the actual costs of recent water recycling projects in California, it is doubtful that a $3 billion investment would produce even 100,000 acre-feet of reliable new water supply in urban areas, and would do nothing for agricultural users. Further, investing $3 billion in conservation and recycling to make up for the smaller tunnel size would use up the most cost effective water conservation and wastewater recycling opportunities, making it more expensive to implement water conservation and wastewater recycling in the future.

The portfolio proposal includes development of new surface or groundwater storage south of the Delta. DWR agrees such new storage should be part of an overall water supply program for California in coming decades, this is made clear in BDCP Appendix 1B (Water Storage).

In the past two decades, significant new water storage space in the form of reservoirs and groundwater storage banks has been created south of the Delta. Improving the Delta conveyance

system will increase the ability to use this new storage space and set the stage for additional future storage investments.

*Conclusion: California will need investment in all alternatives due to increasing demand for water, especially since existing supplies will be reduced by climate change. Many such investments should occur independent of, and parallel to, the BDCP. But investment in protecting the supply of water from the Delta is the most cost effective way to protect an important source of California water supply from disruption. A more detailed discussion of water supply management alternatives is in Appendix 1C (Demand Management Measures) of the BDCP administrative draft EIR/EIS.*

**3. Premise: The biological goals and objectives of BDCP could be met by the "portfolio based" alternative, thus fulfilling the requirements of both a Habitat Conservation Plan under the federal Endangered Species Act, and a Natural Community Conservation Plan under the California Natural Community Conservation Planning Act.**

The portfolio alternative reduces by one-third (from 65,000 acres down to 40,000 acres) the amount of tidal marsh habitat that would be restored. This reduction would save money, but would also reduce the environmental benefits of BDCP. The BDCP is an ecosystem-based plan designed to restore fish and wildlife species while also providing a more reliable water supply. The goal is to do more, not less, to help the environment. The proposed project includes a tidal habitat restoration target of 65,000 acres because tidal marsh habitat may contribute to the recovery of some critical fish species, and will surely provide a wide variety of other environmental benefits. There appears to be sufficient land available to achieve this goal over the first 40 years of BDCP implementation. Adaptive management could allow for subsequent adjustment of this program. DWR looks forward to working with the portfolio signatories through the adaptive management process to make adjustments as necessary to achieve BDCP biological goals and objectives.

According to the analysis contained in Chapter 9 of the BDCP, 72 percent of mean total CVP and SWP deliveries would be diverted through south Delta intakes with the 3,000- cfs proposal, compared with 51 percent under the BDCP proposed action's 9,000- cfs project. The south Delta is where fish species are most at risk from pumping. When more water is diverted through the south Delta intakes, such action increases the potential for take of aquatic species from entrainment and predation. Thus, the reduced opportunity to divert from the north Delta when environmental

conditions are appropriate represents a reduced opportunity to address existing, ongoing adverse environmental conditions in the south Delta. Under both scenarios, pumping is maximized during wet periods, and minimized during dry periods.

*Conclusion: Based on the best available science restoration of tidal marsh is an important habitat for some species and DWR is committed to doing more, not less to meet the biological goals and objectives of the plan. The portfolio plan may undermine this biological objective.*

**4. Premise: A smaller Delta water export facility would provide adequate protection against a prolonged inability to export water from the south Delta due to the flooding of Delta islands following an earthquake or major storm.**

The United States Geological Survey has stated that, in the next 40 years, there is a high likelihood of a major earthquake that will collapse from several to many Delta islands. (Appendix 3E of the 2nd Administrative Draft discussed Seismic Risk and Climate Change in the Delta). Another likely event is a major storm that would cause the same result. If many Delta islands fail, sea water will enter the Delta, replacing fresh water in the Delta and greatly reducing water exports. It may take from one to 10 years to rebuild enough Delta levees to once again allow substantial exports from the south Delta. It may even be impossible to fully restore enough islands to allow export from the south Delta to resume on a reliable basis. The Delta is currently nearly one fifth of the state's water supply. Large regions in the Bay Area (e.g., the Silicon and Livermore valleys, and the Contra Costa Water District), Central Valley, and Southern California rely on the Delta for 25 percent to 100 percent of their water supply. Delta exports averaged 5.3 million acre-feet per year over the last 20 years. If it appears that Delta exports are not possible for several to many years, a tunnel project would likely have to be built to provide water as soon as possible to prevent an economic catastrophe. Statewide economic impacts of a multi-year Delta outage could be as high as $10 billion per year, and job losses could be as high as 40,000 per year. In this scenario, a 3,000- cfs facility would be insufficient to meet the State's water needs and avert huge economic losses. Adding an additional 6,000 cfs under urgent conditions to avert this disaster would cost more than $11 billion (in addition to the $9 billion of building the 3,000- cfs facility initially). The portfolio concept includes $1 billion in levee improvements in the Delta to address seismic risks. While this level of investment in Delta levees may be appropriate for the long term, it will not prevent the type of levee collapse that is threatened by earthquake, major storm events,

and sea level rise. Nor can it substitute for the type of protection against levee collapse that the 9,000- cfs tunnels would provide.

> *Conclusion: building a 3,000- cfs tunnel would leave California dangerously exposed to a 75 percent reduction in Delta water supply after a major earthquake or storm. Building an emergency facility in the event of a major Delta island failure would cost more than building the 9,000- cfs tunnels now and would have to be done under enormous pressure to restore water supply reliability.*

**Conclusion**

This analysis indicates that while the portfolio approach includes many worthwhile elements, it ultimately is not a viable solution for meeting the state's co-equal goals for restoration of the Delta ecosystem and a more reliable water supply. Moreover, integrating activities beyond the Delta into the permit process would be legally challenging and substantially increase the complexity of complying with the legal requirements of an NCCP, and is therefore not a practical alternative to the BDCP proposed project. But the proposed approach helpfully draws attention to the larger statewide policies that will contribute to the success of the BDCP and are needed as we plan for more sustainable water management. DWR is committed to working with the portfolio proponents to ensure that the elements identified in the portfolio approach are part of a broader statewide effort to manage water resources more efficiently and sustainably.