A Portfolio-Based BDCP Conceptual Alternative

The eight components described below represent a conceptual alternative, not a proposed BDCP project. The analysis of this alternative is intended to assist BDCP in developing the most cost-effective and environmentally beneficial final BDCP project that can be implemented and produce benefits rapidly. Variations on the approaches below should be analyzed as well, including a full range of conveyance capacities.

Guiding Principles

Science-Based Ecosystem Management: Credible, proven science will determine ecosystem improvements and water management, using on-the-ground results as the central driver of decision-making.

Water Supply Reliability: The BDCP can contribute to improved water supply reliability by reducing the physical vulnerability of Delta water supplies and embracing a portfolio approach that recognizes that water suppliers and the public have a broad range of options both in and outside of the Delta to meet their water needs and improve reliability.

A Strong Business Case: A strong business case is central to the success and financial viability of the BDCP. Sound economic principles and cost-benefit analysis must inform water supply improvements so that water ratepayers understand that the benefits they will receive from the project are reasonably proportional to what they are being asked to pay.

Water Quality: Delta water quality will be strongly influenced by the final BDCP plan, with potential impacts and benefits to export water users, local municipalities, Delta residents, Delta farmers and the ecosystem.

Conceptual Elements of a Diversified Portfolio Approach

New Conveyance Facility: Focus BDCP analysis on one 3,000 cfs North Delta intake facility and a single tunnel sized for 3,000 cfs gravity flow. This smaller facility would lower BDCP costs, improve reliability and reduce opposition. If implementation proves successful in meeting biological goals and objectives, a second phase could be constructed subsequently, but would not be permitted at this time.

Project Operations: Analyze, as a starting point for analysis of future SWP and CVP operations, the best science available today. In particular, analyze the operations proposal developed by state and federal biologists to conserve and manage a full range of covered Delta fish species, including consideration of the need to protect upstream fisheries resources.[1] Project operations should utilize a “big gulp, little sip” approach that increases exports in wet years – when water is available in excess of environmental needs

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[1] The work of state and federal agency biologists to produce a science-based operational scenario is summarized on pages 1-16 of this BDCP presentation - http://www.essexpartnership.com/wp-content/uploads/2012/11/BDCP_CS5_Update_NGO-Meeting_11_14_12v3.pdf

– and reduces diversions in average and drier years, particularly during key periods such as the spring and fall. Such an operations proposal has been developed over the past year by state and federal fish agency biologists. This is an important agency analysis that should be subjected to additional refinement in an open, transparent process, utilizing independent external peer reviewers. It is essential not to delay a detailed analysis of the likely yield of a new facility based on the best available science.

Estimated Water Exports: ~ 4 - 4.3 MAF/ year (2025). This is an initial estimate of average exports. BDCP has not yet modeled a 3,000 cfs facility with additional South of Delta storage and the agency-developed operational scenario included in this proposal.

Reduced Reliance on the Delta through Investments in South of Delta Water Supplies: DWR, many Urban Water Management Plans and other analyses have concluded that local water supply tools including conservation, water recycling, and other approaches, can provide reliable, sustainable and plentiful new sources of supply that will also be cost-effective over the long run. These sources can also be provided rapidly through additional investments. There is approximately as much new water available from these new water supply sources as is currently exported from the Delta.

This conceptual alternative proposes a smaller capital investment in a Delta facility, in comparison with the current BDCP preliminary project, and investment of savings in local water supply projects. For analytical purposes, this alternative includes a $2 billion investment in water recycling (at a capital cost of approximately $6,430 - 6,470 per AF of permanent water recycling capacity) and a $3 billion investment in urban conservation (at an initial/capital cost of $3,230-4,860 per AF).[2] Urban stormwater capture, groundwater cleanup, and conjunctive use should be included as cost-effective methods for generating future new sources of water, and would also be important elements of a large-scale effort to invest in new local water sources. Additional cost-effective savings can also be obtained from investments in agricultural conservation.[3]

Estimated Yield: 926,000 - 1,245,000 acre-feet of permanent water supply. (309,000 – 311,000 acre-feet from water recycling and 617,000 - 934,000 acre-feet from urban efficiency.)

Improved Water Agency Integration: The principles of integrated regional water management planning should form the foundation for improving cooperation and integration among Bay Area, Central Valley, and Southern California water agencies to provide improved water supply reliability and quality benefits. Increasing integration and

[2] See attachment for additional detail regarding cost and yield estimates. Note that these are initial/capital costs, not annual per-acre-foot unit costs. A comprehensive BDCP analysis should also address operations and maintenance costs of a full range of alternative investments.

[3] The Department of Water Resources Bulletin 160-2009 http://www.waterplan.water.ca.gov/cwpu2009/index.cfm (Volume 2,Chapter 2, page 2-13) states that agricultural water conservation costs range from $35-$900 per AF. Because of the width of this cost range, agricultural conservation is not included in the conceptual cost and yield numbers above. A final BDCP portfolio proposal should, however, include agricultural water use efficiency investments.

cooperation among these agencies could produce substantial potential benefits and cost-savings. For example, more than a dozen significant water agencies serve the Bay Area. Improved physical connections and increased cooperation among these agencies could reduce risks related to earthquakes and localized drought conditions, facilitate wastewater recycling, and utilize existing infrastructure more efficiently.

In Southern California, additional benefits could be obtained, for example, by facilitating water management agreements and programs among agencies with the potential to construct water recycling facilities and agencies that have groundwater storage resources. The Metropolitan Water District could operate its system to facilitate innovative and cost-effective water management programs between agencies in Southern California and elsewhere in the state. Southern California groundwater agencies could allow water from Southern California surface storage facilities to be managed conjunctively with regional groundwater storage facilities. This could, in essence, create new surface storage capacity at the far lower cost associated with groundwater storage. This approach could help take advantage of the supplies available during "big gulp" opportunities in the Delta. Similar potential benefits may exist through increased integration and cooperation in the agricultural sector.

In all of these opportunities it is imperative that program costs be clearly identified and allocated to the water suppliers that benefit. In this way, each public water supplier is able to account to the public it serves that their water ratepayer dollars are being spent wisely, according to law and in a manner that provides clear benefits.

New South of Delta Surface and/or Groundwater Storage: Include up to 1 MAF[4] of new South of Delta storage, with funding allocated through competitive bidding to evaluate proposed surface, groundwater and conjunctive use projects. Investments should be focused on projects that can be completed quickly and that are most cost-effective. Additional South of Delta storage[5] can allow for greater water exports in wetter years. As discussed above, surface storage south of the Delta could be used conjunctively with groundwater facilities to store wet-year exports for future dry years. This increase in storage capacity must be accompanied by new Delta operations that ensure that the new storage will be operated to implement "big gulp, little sip" operations.

Levee Improvements: Improve existing levees and build setback levees as part of habitat restoration. A $1 billion additional investment could improve Delta levees to protect life, property, and important infrastructure, and also upgrade key levees including the eight western Delta islands to a higher standard with improved stability and resilience

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[4] This 1 MAF storage target is based on limited BDCP modeling and may be revised based on further analysis.

[5] As used in this proposal, South of Delta storage is defined as storage integrated into the existing SWP and CVP Delta export system, including surface and groundwater storage in the Bay Area, the west side of the San Joaquin Valley, Kern County and Southern California. It includes storage controlled by the CVP, the SWP, MWD, Kern County Water Agency and other regional and local agencies.

in the face of seismic risk. Upgrading these key levees would provide significant water reliability benefits and would be an appropriate use of exporter funds.

Regardless of the size of a Delta facility, maintaining and improving Delta levees is critical to ensuring the physical reliability of Delta exports. Even with new conveyance, the CVP and SWP will continue to rely on water exports from the South Delta, particularly in drier years. With a 9,000 cfs facility, exports from the South Delta would constitute approximately 50 percent of total exports. In critically dry years, BDCP currently anticipates that 75 percent of total exports would be diverted from the South Delta.[6] Therefore, the benefits of this proposed investment in levee improvements would be particularly significant in dry years. BDCP does not currently include a strategy to reduce the physical vulnerability of the portion of Delta exports that would continue to rely on the Delta levee system.

East Bay Municipal Utility District, Contra Costa Water District and Delta landowners currently contribute to the maintenance of the levees upon which they rely. An analogous investment by export agencies would produce significant reliability benefits. For example, with average exports of 4 MAF/y, a contribution of $8/AF would produce $480 million to help improve Delta levees over the coming 15 years. Public funds for levee improvements are appropriate to protect Delta residents and infrastructure of regional and state importance (e.g. highways). Additional local contributions may be required.

Delta Floodplain and Tidal Marsh Habitat Restoration: Implement a large scale, approximately 40,000 acre habitat restoration program to benefit Delta fish and wildlife species, to provide a broad range of ecosystem functions and to be integrated with Delta flood management improvements. There is strong scientific evidence that floodplain habitat restoration, combined with adequate flows, can benefit salmon and other species. However, agency “red flag” memos and the National Research Council review of the existing biological opinions concluded that floodplain restoration cannot substitute for required ecosystem flows. Restoration of tidal marsh habitat, also a desirable activity, nonetheless, has far greater uncertainty associated with it, regarding benefits for many covered species, in comparison with the likely benefits of floodplain restoration. Tidal marsh restoration should be included in the BDCP plan as a complement to flow augmentation and floodplain restoration, as it is more likely to benefit some covered fish species in combination with these elements. Habitat restoration, particularly tidal marsh restoration, should in any case be implemented within an adaptive management framework. Existing CVP and SWP mitigation responsibilities, as well as new mitigation responsibilities associated with a new Delta facility, will be paid for by water exporters, while public funding should be focused on conservation benefits that go beyond

[6] BDCP Draft Effects Analysis, April 13,2012. Tables C.A-24 and C.A-27 from Appendix 5.C - Attachment C-A, which can be found on p. C.A. 83 and C.A. 92 at this link: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_Effects_Analysis_-_Appendix_5_C_Attachment_C_A_-_CALSIM_and_DSM2_Results_4-13-12.sflb.ashx

mitigation. This proposal is focused on the coming 15-20 years. Long-term restoration efforts are likely to require additional funding.

Integrating Science into Delta Management: Increase the integration of the best available science into all aspects of Delta and related resource management. The Delta is a complex and highly dynamic system. During the past decade, an expanded investment in science has improved our understanding of this ecosystem. With ongoing investments, that understanding will continue to improve. A long-term investment in science and a program to integrate new scientific results into ongoing management are essential to long-term success. Therefore, BDCP should include the following:

- External independent scientific review at critical points, with clear mechanisms to incorporate peer review results.
- Quantified performance objectives, such as SMART[7] biological objectives and criteria for ecosystem restoration and water operations.
- Governance and adaptive management processes designed to ensure that goals and objectives are achieved, to obtain the best available science over time, and to ensure that scientific results are fully integrated into on-the-ground management.
- Carefully designed roles for the state and federal projects, as well as other stakeholders, to ensure a reliance on objective science.

This science-based approach is not anticipated to result in large increases in project costs. In fact, this approach would increase the cost-effectiveness of BDCP efforts, and should result in savings.

<u>Affording, and Paying for the Portfolio-Based Conceptual Alternative</u>

Our organizations strongly support an analytically-based beneficiary pays approach to BDCP financing. We believe that the analysis of this portfolio approach will assist BDCP in developing detailed cost allocations and in attracting additional funding partners. It will also help reduce pressure for public funds and ensure that such funds are spent effectively and appropriately.

Preliminary cost estimates indicate that this conceptual alternative is less expensive than the current preliminary preferred BDCP project. In addition, some of the investments in this portfolio alternative, such as levee and local water supply investments, are likely to be necessary even with a large Delta facility. Therefore, the actual cost difference between these two different approaches may be larger than indicated here.

This conceptual alternative is more financially viable than the preliminary preferred 9,000 cfs Delta facility project. That project, pegged at $14 billion or more, is proposed to be paid for by water exporters. Proposed habitat restoration could cost up to an

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[7] SMART objectives are those that are specific, measurable, achievable, relevant to the goal and timebound.

additional $4 billion, raising the total capital cost of the current approach to approximately $18 billion. By reducing the size of the project to a 3,000 cfs, single-bore facility, many billions of dollars can be freed up to invest in more local supply development and the water exporter shares of the other conceptual alternative components.

The water code requires water users to pay for a new Delta facility.[8] The public share of this conceptual alternative could be funded in part by a reduced water bond. The increased benefits and reduced cost of this approach can assist BDCP in attracting increased funding from beneficiaries, reducing the pressure on the water bond. We believe that the diversified portfolio approach in this conceptual alternative could assist in the effort to develop a broadly supported and effective new water bond.

Estimated Cost Summary

Conceptual Portfolio Component	**Estimated Cost**	**Source of Funding**
New 3,000 cfs North Delta Facility	~ $5-$7 billion[9]	Export water agencies
Local Supply Development	$5 billion	Local water agencies and cost share per state Integrated Regional Water Management Program (IRWMP)
Improved Water Agency Integration	TBD (may be funded through local supply funds described above)	Water agencies and cost share per state IRWMP
New South of Delta Surface and/or Groundwater Storage	~$1.2 billion[10]	Exporters or local water agencies, and public cost share per IRWMP
Levee Improvements	$1 billion	Public, water exporters and other beneficiaries and Delta community
Delta Floodplain and Tidal Marsh Habitat Restoration	$1.7 billion	Export agencies and public
Integrating Science into Delta Management	TBD	Public and water agencies
Total Conceptual Alternative Cost	~$14 to $16 billion	

[8] California Water Code Section 85089.
[9] A BDCP July 1, 2010 presentation estimated the capital cost of a 3,000 cfs facility with 2 18-foot diameter tunnels at $7.2 billion. Using a single tunnel would reduce costs significantly.
[10] See attachment for details regarding cost estimates.

Total Conceptual Alternative Water Supply Benefits

~ 4.9-5.5 MAF/YR.

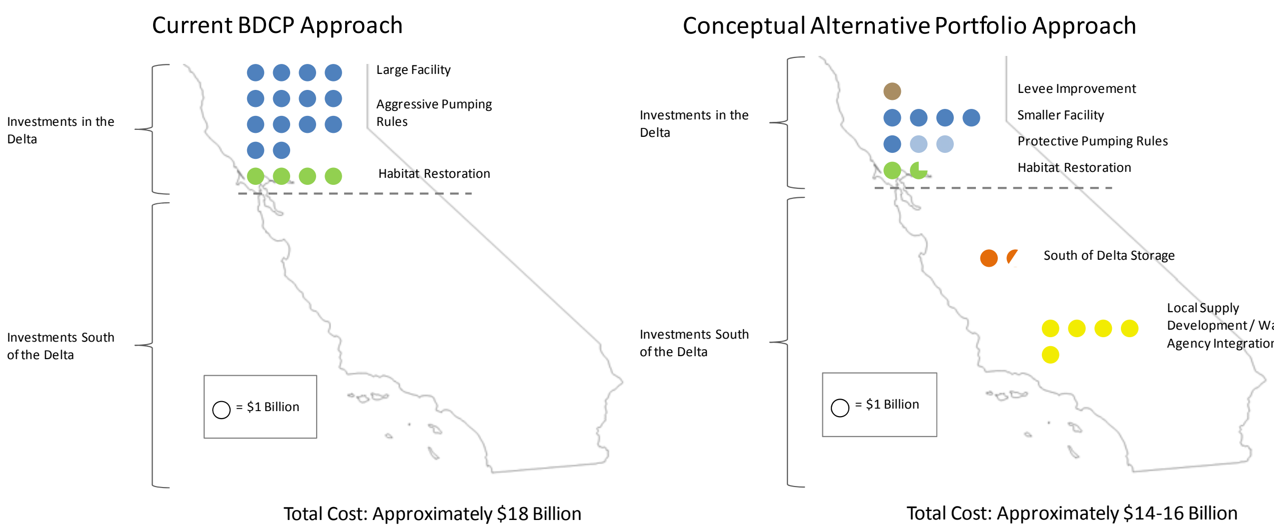
Delta exports: ~ 4-4.3 MAF/Y.

New South of Delta sources: ~ .93-1.2 MAF/Y

NATURAL RESOURCES DEFENSE COUNCIL

Benefits of a Diversified Portfolio Approach to the Bay-Delta and Water Supply

A Bay Delta Conservation Plan that includes a balanced portfolio of investments both in and outside of the Delta offers a wide range of potential benefits in comparison with a narrow focus on a large new Delta water conveyance facility and habitat restoration. Given the statewide importance of a Delta solution, we urge BDCP, the Delta Stewardship Council and others to analyze these and other potential benefits from a portfolio approach to restoring the Bay-Delta and improving water supply reliability in export areas.



Cost-Effective Solutions: By considering the benefits of water supply investments that do not depend on increased exports from the Delta, a portfolio approach can help in developing the most cost-effective plan for the Bay-Delta and improved water supply reliability. This approach is similar to integrated planning efforts undertaken by individual water agencies across the state and has the potential to provide superior benefits at a lower overall cost.

More Water for California's Economy: A smaller Delta facility would save billions of dollars in construction, operations and maintenance costs. Some of these savings can be invested in proven water supply tools such as water conservation and recycling, and in South of Delta storage that can provide improved dry year water supply. Considered as a complete portfolio, this approach can produce more water for export water users than would be produced through a narrow focus on a large Delta facility.

Jobs for Southern California, the Bay Area and the Central Valley: Investing billions of dollars in new water sources in export areas will generate thousands of jobs in the communities that will provide the local cost share for these investments. Based on an analysis by the City of Los Angeles, a $3.5 billion investment in local water solutions in the urban sector would generate 10,000 jobs over a five year period. In contrast, a narrow focus on a large Delta facility and habitat restoration would generate few direct jobs in communities south of the Delta.

Science-Based and Permittable: By basing proposed operations in the Delta on the best available science and by investing in alternative water supply sources that reduce reliance on the Delta, a portfolio approach allows BDCP to develop a truly science-based plan that can receive required regulatory permits.

Better Environmental Results: By reducing pressure for Delta exports, a portfolio approach could help implement science-based flow standards in the Bay-Delta to restore the largest estuary on the West Coast, to help recover listed species and to rebuild the California salmon fishery. In addition, investments in local water supplies in the export areas can reduce energy use and greenhouse gas emissions associated with transporting water from northern to southern California. Some of those investments, such as water recycling, groundwater management and urban stormwater capture can also improve Southern California coastal water quality and reduce contamination in groundwater basins.

Faster Water Supply Benefits: The length of time required to provide benefits is a key factor in designing a Delta plan. A large new Delta facility would provide no benefits until construction is complete – perhaps 15-20 years from today. In contrast, investments in local water supplies and stronger Delta levees produce benefits more rapidly, as each project is completed. In addition, a smaller facility could likely be constructed more rapidly. The delay in receiving benefits from a large facility could result in even higher costs for export water users, who could be forced to make major investments in local water supplies during the coming 15-20 years, in addition to the cost of financing a large Delta facility.

More Local Control Over Water Supplies: By increasing investments in local water sources, a portfolio approach would increase local control over water supplies. Communities including Los Angeles, San Diego, Long Beach, Santa Monica and many others are already planning major investments in local water supplies that will reduce their reliance on water imported from the Delta. This approach is also consistent with the state water code requirement to reduce reliance on Delta water supplies.

Greater Reliability, Especially During Dry Years: A portfolio approach would provide multiple water supply benefits during dry years, when water is most precious. First, local water sources such as conservation and water recycling are far less vulnerable to droughts, earthquakes and climate change impacts than are Delta supplies. Second, a portfolio approach would invest in South of Delta water storage to increase water availability in dry years. And third, by investing in Delta levees and a smaller Delta facility, a portfolio approach would provide greater dry year reliability than would a large facility alone. BDCP currently anticipates that more than 75% of Delta exports will come from the existing South Delta pumps in the driest years – even with a large new North Delta intake. Under this approach, investments in Delta levees are needed to decrease the vulnerability of 75% of Delta exports in the driest years. In any “dual conveyance” alternative that would divert from both the North and South Delta, investments in Delta levees would improve the reliability of ongoing exports from the South Delta.

Broader Potential Support: Most of the concepts included in a portfolio approach have been supported by a wide range of stakeholders for many years. This approach could provide broader benefits for the Delta, for the environment and for water users than an approach that is artificially constrained to the Delta alone. This portfolio approach could attract broader support, leading to new potential financing partners and easier implementation.

A PORTFOLIO-BASED BDCP CONCEPTUAL ALTERNATIVE

APPENDIX A: ALTERNATIVE WATER SUPPLY COST AND YIELD ESTIMATES

This conceptual alternative proposes a smaller capital investment in a Delta facility, in comparison with the current BDCP preliminary project, and an investment of some of the savings in regional water supply tools. This analysis includes estimates of the capital cost and water supply benefits of regional investments. The capital costs associated with water recycling are well established. In state-wide projects, these costs are estimated to range between $6,430 and $6,470 per acre-feet ("AF") of permanent water recycling capacity. Capital, or initial/one-time costs for urban water use efficiency are less well established, as these costs are usually expressed in total annual costs and the costs of efficiency programs can vary widely. Due to the variation of cost estimates, this analysis focuses on the cost estimates provided in the California Water Plans of 2009 and the 2013 update in order to present a consistent source and methodology. The $3,230/AF to $4,860/AF capital cost for urban water efficiency programs is explained in greater detail below. Other alternative water supply investments are also promising, such as improvements in agricultural water use efficiency, improved groundwater management and stormwater capture and reuse. Our analysis has not focused on these types of investments because cost and yield information vary widely. However, our analysis is not meant to exclude investments in these types of supplies, which will be cost-effective investments in many localities.

The cost estimates presented are to generate an acre-foot of permanent water yield capacity. Typically, recycling and efficiency cost estimates in the water industry are presented as annualized unit costs. In order to present the data in a similar format to the BDCP project, and to represent the yield that could be generated with a specific level of investment, the units of a permanent acre-foot of capacity have been used. The goal of this analysis is for stakeholders to be able to compare a range of water investment opportunities, and design optimal investments based on the full range of available water supply options including water recycling and urban efficiency programs. Further analysis should be conducted to determine actual yields from planned programs in specific timeframes. Table 1 presents the range of cost estimates for recycling and urban efficiency estimates.

Table 1: Comparison of Different Units for Recycling and Efficiency Estimates using California Water Plan Data

	Permanent Capacity/Capitalized Cost	**Annualized capital cost/unit cost**	
	Cost of constructing a permanent AF of capacity. To calculate efficiency estimates, took present value of annualized unit cost over 15 years, at a rate of 6.00%	Annualized cost to construct an AF of yield, generally calculated by taking present value of cost divided by present value of total yield.	Source
Recycling cost estimate ($/af) - low end	6,430	not identified	California Water Plan Update 2009
Recycling cost estimate ($/af) - high end	6,470	not identified	Ibid.
Urban Efficiency cost estimate ($/af) - low end	3,230	333	California Water Plan Update 2013, early draft
Urban Efficiency cost estimate ($/af) - high end	4,860	500	Ibid.

Note: data has been rounded to 3 significant figures.

At these costs, a five billion dollar investment would generate 926,403 to 1,239,834 AF of permanent capacity. Table 2 presents the yield that would be generated with this investment.

Table 2: Permanent Water Yield Production with $5 Billion Investment

	Investment Amount ($)	Cost estimate ($/af)	Water yield (af)
Recycled water	2,000,000,000	6,430 - 6,470	309,119.01 - 311,041.99
Urban Efficiency	3,000,000,000	3,230 - 4,860	617,283.95 - 928,792.57
		Total	**926,402.96 - 1,239,834.56**

It is important to note that an investment in a Delta facility would result in significant additional ongoing operations and maintenance (O&M) costs (e.g. maintenance of Delta tunnels and screens[1]). Some investments in regional supplies would also result in ongoing O&M costs. For instance, a recycling plant in Orange County[2] has an all-in annual cost of water of $1,000 per acre-foot, which includes capital and operating costs. The annualized capital cost is calculated to be $429.46/AF, which indicates that the annualized operating costs are $570.54 per acre-foot.[3] In contrast, urban water efficiency programs generally have no to minimal operating costs after the initial program investment. Efficiency programs are even more cost-effective in comparison to infrastructure projects when the operating costs of infrastructure projects are considered. In order to compare the benefits of capital investments in a large Delta facility with the portfolio approach contemplated in this alternative, this analysis excludes the O&M costs of all of these investments and thus likely undervalues the true long-term benefits of efficiency investments as compared to other types of investments. A comprehensive BDCP cost-benefit analysis should include capital and O&M costs for all investment alternatives.

As indicated below, an analysis by the San Diego County Water Authority of existing Southern California UWMPs reveals that agencies are already planning to develop more than 1.2 MAF of new local water supplies.[4] This analysis shows the large scale of currently planned investments to reduce reliance on Bay-Delta supplies, as required by the Delta Reform Act.

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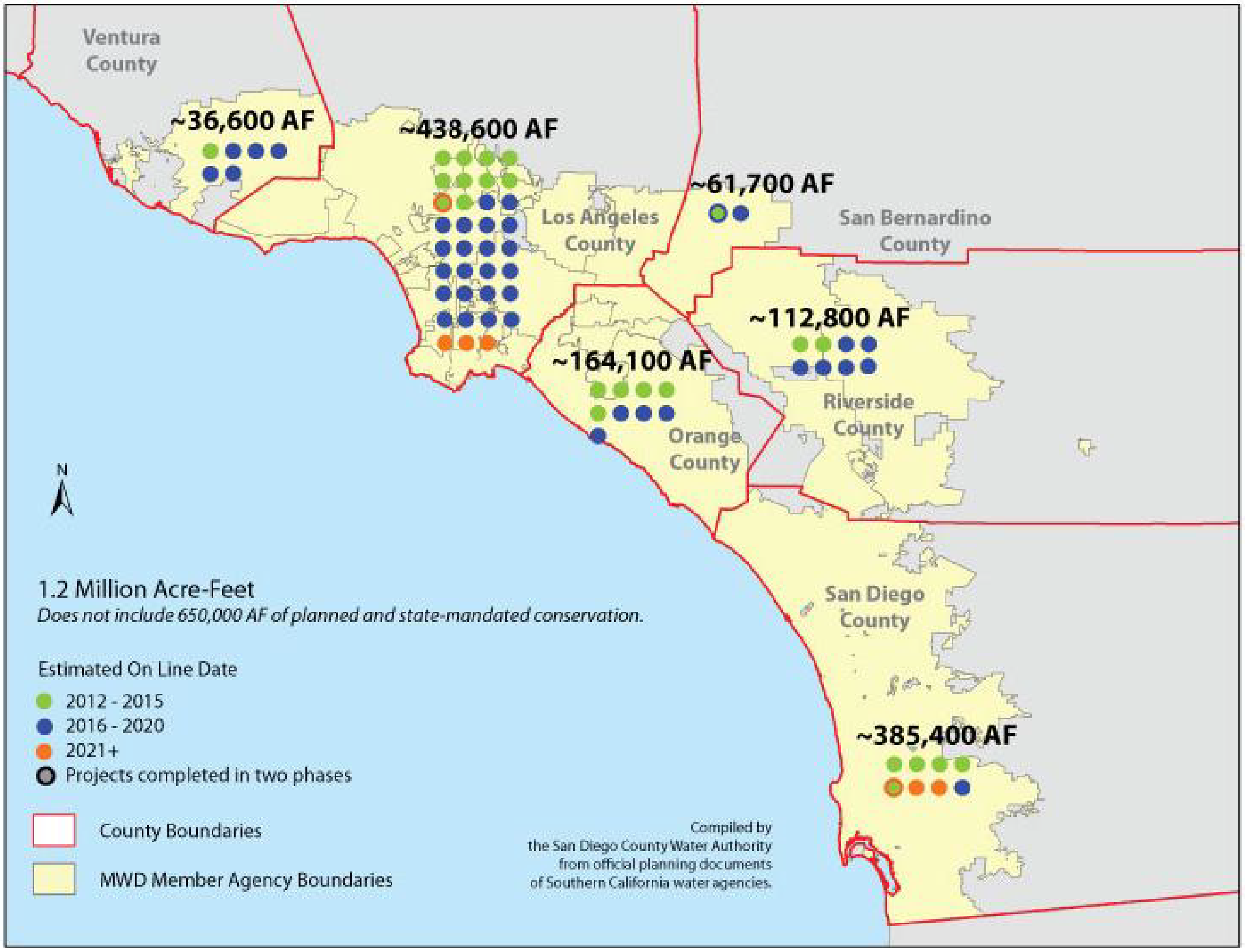
[1] BDCP Draft Chapter 8 estimates the O and M cost for a large Delta facility at $84.5 million per year. Table 8.7 - http://baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx

[2] Los Angeles County Economic Development Corporation Report, "Where Will We Get the Water? Assessing Southern California's Future Water Strategies, Draft, August, 2008, http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf

[3] Project data presented on pages 3 and 13: amortized capital debt of $470 million over 30-year period at a rate of 5.00%. Then, divided by annual yield of 72,000 acre-feet.

[4] Southern California's Local Water Supply Plans. Analysis prepared by San Diego County Water Authority, Dec. 2012

Southern California's Local Water Supply Development Plans (2012 - 2035)



Urban stormwater capture and groundwater cleanup and conjunctive use are two alternative water supply sources that present reliable and potentially cost-effective methods for generating new sources of water. These sources would result in many of the additional benefits noted above as well as further benefits such as reducing stormwater runoff and complying with the Clean Water Act requirements. Extensive research into published cost and benefit analysis have revealed that there is a limited amount of state-wide cost and benefit data available for both urban stormwater capture and groundwater cleanup and conjunctive use. There is also a large range in the cost of these projects due to site specific components, such as the groundwater level, amount of energy required to pump the recharged storm and groundwater, and treatment costs. Therefore, we have not included these two sources for generating specific water yields, but strongly promote the implementation of these programs. Likewise, agricultural water use efficiency investments should be part of a final BDCP plan, however, because of the broad range of potential costs, as indicated in Bulletin 160, cost and yield investments in agricultural water use efficiency are excluded from this conceptual proposal.

SECTION 1: THE STATEWIDE POTENTIAL FOR ALTERNATIVE WATER SUPPLIES

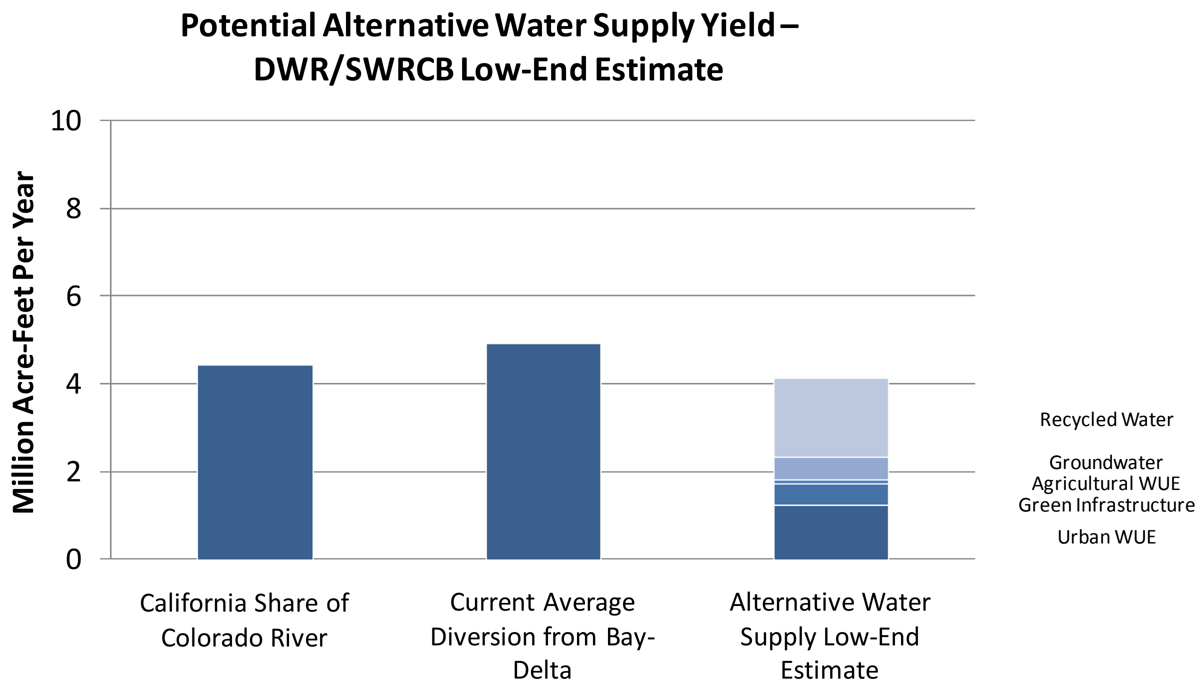
Future Potential Amount of Alternative Water Supplies

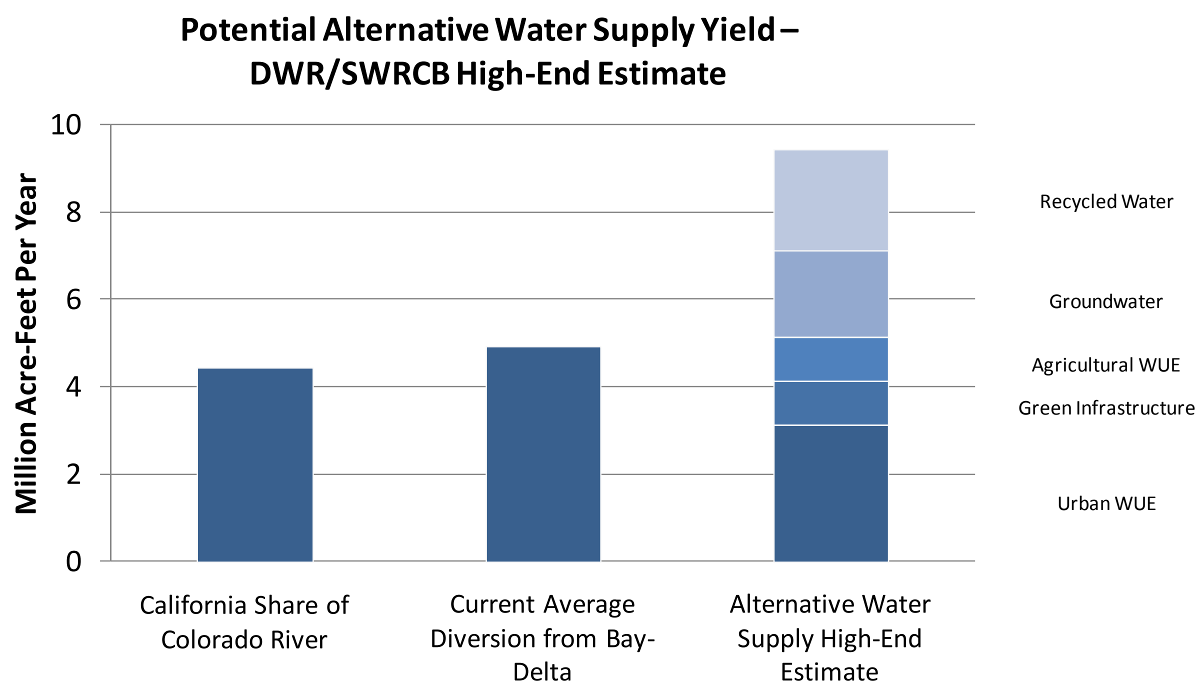
Bob Fisher and Lester Snow, in an opinion piece in the Sacramento Bee entitled "Water Technology Can Shield State from Drought"[5] expressed the potential of alternative water sources:

> The good news is that significant opportunity exists to address California's water issues, but it will take a different approach and a new way of thinking. Much time and effort is spent fighting the same fights over water that have been fought for years. **Instead we could focus on investments that will generate at least 6 million acre-feet of water each year such as multi-benefit projects that advance water use efficiency, new local supplies such as stormwater capture and improved management of groundwater supplies**.

The figures below, prepared using data from the Department of Water Resources and State Water Resources Control Board, identify a similar range of the considerable potential for alternative water supplies to provide an equal amount of water to that currently provided by California's share of the Colorado River or by current average CVP and SWP exports from the Bay Delta.

[5] Bob Fisher and Lester Snow, Water Technology Can Shield State from Drought, Sacramento Bee Opinion Piece, July 29, 2012, http://www.sacbee.com/2012/07/29/4668356/water-technology-can-shield-state.html





Future Potential Amount of Recycled Water

The Recycled Water Task Force Report notes that multiple studies and surveys have been performed to estimate the future potential amount of recycled water across California. In 2002, approximately 10 percent of the treated municipal wastewater produced (estimated to have been 5 million acre-feet (MAF) per year) was being recycled (approximately 500,000 AF per year). The population of California is projected to increase by 50 percent by 2030, which would increase the amount of wastewater available to be recycled to approximately 6.5

MAF per year. The Task Force estimates that the potential use of recycled water in California in 2030, taking into account elements of uncertainty, ranges from 1.85 – 2.25 MAF.[6]

The Los Angeles County Economic Development Corporation, in their report "Where Will We Get the Water?"[7] identifies that there were more than thirty recycling projects in Los Angeles, Orange County, San Diego and the Inland Empire. The potential of these projects is to generate 450,000 AF or more of recycled water within five years.

Based upon these data sources, 309,119 AF to 311,042 AF of recycled water is well within the potential yield of potential recycled water in California.

<u>Future Potential Amount of Water Conserved from Urban Water Efficiency Programs</u>

The Pacific Institute, in their report California's Next Million Acre-Feet: Saving Water, Energy and Money[8] calculate that more than 320,000 AF per year could be saved by the following conservation measures:

- Replacing 3.5 million toilets with high-efficiency models
- Installing faucet aerators and showerheads in 3.5 million homes
- Installing 425,000 high-efficiency clothes washers
- Installing efficient devices in commercial and industrial kitchens, bathrooms, and laundries
- Upgrading cooling towers
- Using pressurized water brooms to clean sidewalks rather than hoses
- Replacing 2,000 acres of lawn with low-water-use plants in each of San Diego, Orange, Riverside, Ventura, Fresno and Sacramento counties

These specific efforts illustrate the water savings yield of water efficiency programs through smaller programs. In the report "Waste Not, Want Not,"[9] the Pacific Institute determined that more than 2.3 MAF of urban water could be saved through efficiency programs.

In addition, the 2009 California Water Plan[10] developed projections for the potential amount of water savings in 2030, and determined that the technical potential, assuming 100% adoption of water efficiency programs statewide, would be 3.1 MAF. This amount could potentially be higher with advances in water-saving technology.

The Los Angeles County Economic Development Corporation report[11] determined the regional potential for water savings through urban water efficiency programs in Southern California alone in 2025 to be 1.1 MAF or more.

[6] Water Recycling 2030: Recommendations of California's Recycled Water Task Force, June 2003, pages 12-14, http://www.water.ca.gov/pubs/use/water_recycling_2030/recycled_water_tf_report_2003.pdf.

[7] Los Angeles County Economic Development Corporation, "Where Will We Get the Water? Assessing Southern California's Future Water Strategies", Draft, revised August 14, 2008, http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf

[8] Pacific Institute, "California's Next Million Acre-Feet: Saving Water, Energy, and Money", September, 2010, http://www.pacinst.org/reports/next_million_acre_feet/next_million_acre_feet.pdf

[9] Pacific Institute, "Waste Not, Want Not: The Potential For Urban Water Conservation in California", November, 2003, http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf

[10] California Water Plan, 2009 update, Volume 2 – Resource Management Strategies, Chapter 3 – Urban Water Use Efficiency, http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v2c03_urbwtruse_cwp2009.pdf

[11] Los Angeles County Economic Development Corporation, "Where Will We Get the Water? Assessing Southern California's Future Water Strategies", Draft, revised August 14, 2008, http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf

In the context of the variety of potential projections, an estimate of 617,284 AF – 928,793 AF of water saved through urban efficiency programs is a reasonable potential estimate.

SECTION 2: RECYCLED WATER CAPITAL COSTS

Many recycled water projects have been built across California over the last decade, and the costs of some of these projects have been published. As noted above, in order to present cost data consistent with the cost presentation of the BDCP project, the recycled cost estimates in this proposal represent the costs to construct a permanent acre-foot of capacity. This calculation can be made by taking the total capital cost of a recycling project and dividing by the annual yield of the project. Table 3 provides a summary of the capital costs published for recycled water projects built across California.

Table 3: Recycled Water Project Capital Costs

Capital Costs ($/af)	Cost category	Project Location	Cost time-frame	Source	Page #	Source Document Location
Costs for statewide programs						
6,800	Average recycled water cost for indirect potable reuselooked at over the life of a project	Cited studies done in Bay Area and Southern California	Study done for 2003 - 2030	Water Recycling 2030: Recommendations of California's Recycled Water Task Force, June 2003	14	http://www.water.ca.gov/pubs/use/water_recycling_2030/recycled_water_tf_report_2003.pdf
6,430-6,470	Estimated range of capital costs, determined by taking $11B / 1.7MAF and $9B / 1.4MAF	Statewide	2030	California Water Plan Update 2009	11-10	http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v2c11_recycmuniwtr_cwp2009.pdf
Costs for Southern California Projects						
6,700	Recycled water meeting drinking water standards. Includes capital cost (before recharging underground storage) and treatment (after water is pumped back up to the surface)	Costs for plant built by Orange County	30 year treated cost	LA County Economic Development Corporation, "Where Will We Get the Water? Assessing Southern California's Future Water Strategies", Aug 2008	13-14	http://www.laedc.org/sclc/documents/Water_SoCalWaterStrategies.pdf
Costs for Northern California programs						
5,650	Average capital cost for treatment plant and distribution pipelines for 5 plants	Bay Area	~2008-2012	Bay Area Recycled Water Coalition	n/a	http://www.barwc.org/projects.html

The average cost of recycled water based upon the cost estimates in Table 3 is $6,200/AF. However, the costs for recycled projects can vary due to the specific requirements of each project, and include the level of wastewater treatment. As noted above, this proposal uses the California Water Plan Update estimates of $6,430/AF - $6,470/AF.

The costs include the cost of capital, the building of the treatment facility, and the building of the distribution facilities, including pipelines and pump stations. The variance among the costs can occur due to the specific requirements of each project, and include the level of wastewater treatment required, distance to deliver the recycled water to the intended users, and whether a storage facility is built for the project.

SECTION 3: URBAN WATER EFFICIENCY PROGRAM CAPITAL COSTS

There are a variety of urban water efficiency programs across the residential, commercial, industrial and institutional sectors. The most typical programs involve educational programs, rebates or incentives for water saving models of devices such as toilets, showerheads, dishwashers, clothes washers, and landscaping. There are also additional programs that result in water conservation such as building code design, landscape ordinances, tiered water rates, and smart meters. To reduce the complexity of the analysis for this proposal, as well as represent the types of urban water efficiency programs that a typical water agency would implement, this analysis has focused on rebate and incentive water efficiency programs. In addition, the limited amount of water efficiency program cost data that has been published is for rebate and incentive urban water efficiency programs.

Much of the water savings that has been already achieved through urban water efficiency measures has been due to efficient plumbing fixture replacements due to building codes. When a fixture fails and needs to be replaced, or there is a bathroom remodel or new construction, current building codes dictate that efficient fixtures are used. This cost is fully borne by the consumer, and the water agency benefits through lower resulting water usage.

The greatest opportunity for water savings created by active conservation programs is in areas not currently covered by building codes. Although roughly half of urban water use is for landscaping, building codes do not fully address efficiency opportunities. Some water agencies have implemented programs for incenting their customers to convert lawns to water efficient landscaping or to water efficient irrigation technology updates. There is greater potential for additional programs at additional water agencies for landscaping efficiency measures.

The analysis in this proposal focuses on water savings generated through active conservation programs in order to compare investments in a large infrastructure project with investments in alternative programs, such as urban water efficiency programs. Therefore, the expected water savings yield from water efficiency programs is focused on programs that the water agency actively implements, and invests in. We acknowledge that the total water savings generated by urban efficiency efforts will be greater than a potential of 928,793 AF when including savings generated by code-driven replacements.

Urban water efficiency program costs are typically represented as annual costs. The costs to run rebate and incentive programs, however, can also be represented as capital costs. These programs involve a fixed, one-time expense in the form of a rebate for a tangible asset that produces benefits over the life of the asset, plus the administrative and potential educational costs to start the program. Once the program has begun, many urban water efficiency programs have little to no operating costs to keep the program running. A small number of programs continue to have costs to monitor the program implementation, such as with site visits for large commercial and industrial programs. Therefore, in order to portray a useful comparison between the costs for an infrastructure project and urban water efficiency programs, this analysis represents urban water efficiency program costs as capital costs. Table 4 provides a summary of the unit capital costs published for urban water efficiency programs.

Table 4: Urban Water Efficiency Program Capital Costs

Cost Ranges ($/af)	Inflation adjusted range to 2012 dollars*	Cost description	Project Location	Cost time-frame	Source	Page #	Source Document Location
Costs for Northern California Projects							
845	845	Cost of 45 water efficiency measures plus plumbing code	East Bay	2010 - 2040	East Bay MUD 2011 Conservation Master Plan	App. C-1	http://www.ebmud.com/sites/default/files/pdfs/EBMUD_WCMP%202011.pdf
860	860	Average unit cost of water savings across 33 measures	San Francisco	2005 - 2035	SFPUC 2011 Conservation Plan Update	42	http://www.sfwater.org/modules/showdocument.aspx?documentid=188
Costs for Southern California Projects							
75-900	79 - 950	Range of costs for current conservation programs, including conservation rebates, incentives, and hardware installation programs	Los Angeles	2010	Los Angeles Department of Water and Power, Urban Water Management Plan, 2010	79	https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-sourcesofsupply?_adf.ctrl-state=19t7dv11v5_4&_afrLoop=573834530616927
69 - 1,343	92-1,796	Levelized costs of water savings for conservation measures such as toilets, landscaping, showerheads, dishwashers, medical sterilizers and other washers.	South Coast region Water Supplier	2000	CALFED Water Use Efficiency Comprehensive Evaluation, 2006	App 2D, costs noted on page 142	http://www.calwater.ca.gov/content/Documents/library/WUE/2006_WUE_Public_Final.pdf
150-1000	158-1056	Marginal cost range, representing estimated expenditures on educational initiatives or subsidies to promote conservation divided by cumulative water savings of program	San Diego	2010 estimates	San Diego's Water Sources: Assessing the Options, July, 2010	12	http://www.equinoxcenter.org/assets/files/pdf/AssessingtheOptionsfinal.pdf
Costs for statewide programs							
223 - 522	272-636	Average unit cost of water savings, includes capital and ongoing project costs	Statewide average	2004	CALFED Water Use Efficiency Comprehensive Evaluation, 2006 as cited in the California Water Plan Update, 2009	Table 3-3, page 3-25	-California water Plan Update, v. 2, Urban Water use efficiency: http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v2c03_urbwtruse_cwp2009.pdf
333-500	333-500	Average cost for water conservation programs	Statewide average	2013	California Water Plan Update 2013, early draft	3-3	http://www.waterplan.water.ca.gov/docs/cwpu2013/2012-ac-draft/Vol3_Ch03_UrbanWUE_AdvisoryCommitteeDraft_ss.pdf
0-1,680	0-1,774	Cost of conserved water for range of urban efficiency programs that require installation of product, including residential indoor and outdoor, and CII from consumer perspective	Statewide	2010	Pacific Institute, California's Next Million Acre-Feet: Saving Water, Energy and Money, 2010	21, water savings in App. A, pg. 16	Main report: http://www.pacinst.org/reports/next_million_acre_feet/next_million_acre_feet.pdf; Appendix A: http://www.pacinst.org/reports/next_million_acre_feet/Technical%20Documentation.pdf

**If costs presented were from a time period prior to 2012, then adjusted to 2012 dollars through using US Inflation Calculator, http://www.usinflationcalculator.com/.*

The range of costs for urban efficiency projects (in 2012 dollars) is from $0/AF to $1,796/AF, with a mid-point of $940/AF. As noted above, this proposal uses the California Water Plan Update estimates of $333/AF - $500/AF. The costs were brought to a dollar value of 2012 dollars to accurately compare and analyze costs. In addition to the time value of money, another factor to be involved in future analyses is the amount of water savings decay that occurs as an urban efficiency program matures. Water agencies have experienced that after a water efficient product is installed, there is decay in the water savings generated by that product over time. Consumers might not maintain their good water saving habits, or with the savings on their water bills, they might expand their water usage through actions such as expanding their landscaped area or installing high water use items. While decay is an influencing factor on total water savings, the amount of water saving decay will vary based upon the type of program being installed. Due to this variability, and the lack of background detail about the urban water efficiency estimates, we expect that a decay factor has not been included in all of the estimates above, but recommend that water savings decay be taken into account when determining the yield for specific urban water efficiency program implementation.

From this range of cost estimates, the permanent acre-foot of capacity was calculated by taking the present value of making investments of $333/AF to $500/AF a year for 15 years (the average lifetime of efficiency programs) using a discount rate of 6.00%, which is the discount rate used by the Department of Water Resources for planning purposes. The present value of $333/AF is $3,230 to generate an acre-foot of permanent capacity and the present value of $500/AF is $4,860 to generate an acre-foot of permanent capacity.

In addition to lessening the amount of water that a water agency needs to purchase, urban water conservation programs can provide additional co-benefits to a water agency. Co-benefits can include:

- reducing the volume of stormwater run-off and subsequent reductions in energy demand and chemical costs of wastewater treatment
- reducing the volume of wastewater in general to treat and the resulting reductions in energy demand and chemical costs
- avoided costs of building additional treatment facilities
- savings from downsizing existing water supply and treatment facilities

The analysis performed in the Pacific Institute Report "California's Next Million Acre-Feet" that would conserve 320,000 AF per year of water through installing different urban conservation measures would also reduce electricity demand in California by 2,300 gigawatt-hours and natural gas demand of 87 million therms per year. This amount of electricity savings is equivalent to the electrical demand of 309,000 homes in California.[12] Quantifying co-benefits to a water agency is difficult, and there is limited published data. Not all water agencies calculate the co-benefits received by their programs. Due to the lack of available data, the urban water efficiency program cost estimates that are used in this analysis mostly do not include any co-benefits from a water agency perspective.[13] Therefore, to a water agency, the total costs of water saved from urban water efficiency programs would be less than the costs indicated.

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[12] California's Next Million Acre-Feet: Saving Water, Energy, and Money, September, 2010, pages 10-11, http://www.pacinst.org/reports/next_million_acre_feet/next_million_acre_feet.pdf

[13] The Pacific Institute Report, California's Next Million-Acre Feet does indicate co-benefit savings from urban water efficiency programs for end users. Since this analysis focuses on the costs from the perspective of water distributors, these benefits were not included in the range of costs, and a cost of $0 A/F was used in the cost analysis to represent the minimum costs of a program.

APPENDIX B: SOUTH OF DELTA STORAGE COST ESTIMATE

The cost of new storage is highly variable and dependent on a variety of factors. There is no current estimate for the most cost-effective South of Delta regional investment in storage. However, Diamond Valley, a Southern California surface storage facility with a capacity of 800,000 AF, was completed by MWD in 2002 at a cost of $1.9 billion.[14] Developing 1 MAF of new South of Delta storage, with a focus on groundwater storage, would be significantly less expensive than an effort focused exclusively on new surface storage. For example, the Kern Water Bank has indicated that the facility has a capacity of approximately 1.5 million acre feet and cost $200 million for the property and $35 million for capital improvements.[15] In addition, in 2008, the Irvine Ranch Water District purchased 50,000 AF of groundwater storage capacity from the Rosedale Rio Bravo Water Storage District at a cost of $19.2 million.[16] At the cost of the Irvine Ranch Water District project, creating or purchasing 1 MAF of new groundwater storage would cost approximately $400 million. The cost estimate in this conceptual alternative is at the mid-point between the cost of the Diamond Valley project and the per acre-foot Irvine Ranch Water District project. The yield from this new storage is included in the initial estimate in Section 2, although additional modeling is required. Further analysis by BDCP should include the identification of the most cost-effective potential South of Delta storage options, including a refinement of the initial cost estimates included here.

APPENDIX C: LEVEE MAINTENANCE AND IMPROVEMENT COST ESTIMATES

This cost estimate is based upon data provided in the Economic Sustainability Plan prepared by the Delta Protection Commission.[17] The goal of this investment is to improve levees within the Delta to a recognized standard, such as the PL 84-99 standard. The discussion on pages 68 and 69 estimates that of the total 980 miles of levees that are being maintained within the Legal Delta, there are 537 miles that "need to be maintained and perhaps improved primarily by the state and reclamation districts."[18] Of the total 980 miles of levees, the Economic Sustainability Plan identifies 613 miles of "lowland" levees. Of these 613 miles of levees, some levees already exceed the PL 84-99 standard, and some levees are project levees built by the U.S. Army Corps of Engineers that also exceed the PL 84-99 criteria. This leaves approximately 350 miles of levees that need improvement to reach the PL 84-99 standard. These 350 miles of levees includes the levees of the 8 western islands, which are critical areas of improvement from the perspective of South Delta water export reliability.

During the March 15 and March 16, 2012 meeting of the Delta Stewardship Council, there was a presentation of levee programs and a recent effort by the Department of Water Resources ("DWR") to determine how many of the Delta levees meet the PL 84-99 standard, as well as a lower standard. DWR determined that of the 534.6 miles of non-project levees (the levees that need to be maintained by the state and reclamation districts; note this figure is slightly different than the 537 miles noted in the Economic Sustainability Plan), 250.32 of them presently meet or exceed the PL 84-99 standard. This results in 284.28 miles needing improvement to the PL 84-99 standard, and this total also includes the levees of the 8 western islands. Therefore, the figure of 284 miles that need to be brought to the PL 84-99 standard is more recent than the data presented in the Economic Sustainability Plan, and can be used as the current estimate of levees needing improvement.

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[14] http://www.water-technology.net/projects/eastside_res/
[15] http://www.kwb.org/index.cfm/fuseaction/Pages.Page/id/352#faq_15. Some NGOs have questioned the value of the Table A entitlements that were exchanged for the Kern Water Bank property.
[16] http://www.irwd.com/your-water/water-supply/water-banking.html
[17] Economic Sustainability Plan for the Sacramento-San Joaquin Delta, January, 2012, ES http://www.delta.ca.gov/res/docs/ESP_P2_FINAL.pdf
[18] Economic Sustainability Plan for the Sacramento-San Joaquin Delta, January, 2012, pg 68.

The cost to bring a levee to the PL 84-99 standard is estimated to be between one to two million dollars per mile. To bring the 250 miles up to the PL 84-99 standard would cost between $284 million and $569 million.

The Delta Sustainability Plan goes on to suggest on page 97 that lowland levees, which are most at risk of possible sea-level rise and provide salinity intrusion benefits, should be improved to a higher Delta standard than PL 84-99 "that will provide 200-year plus protection for floods, earthquakes and sea-level rise and that will incorporate ecologically friendly vegetation on the water side". The cost to bring a levee to the higher Delta standard is an additional cost of two to three million dollars per mile. The cost to bring 284 miles from the PL 84-99 standard to the higher Delta standard would be between $569 million and $852 million. The total cost, therefore, to bring the 284 miles to the higher Delta standard would be between $853 million and $1,421 million.

There are some existing sources of funding to support Delta levee maintenance. Propositions 84 and 1E provide funds to improve levees within the Delta system. Some of these funds have been spent. Assuming that a minimal amount of funds are currently available for levee improvement, the investment of $1 billion included in this alternative could be large enough to bring all 284 miles to the higher Delta standard, especially with the benefit of the remaining funding from Propositions 84 and 1E.

This estimate does not represent a specific proposal regarding appropriate levee standards. Rather, it is intended as a starting point to evaluate possible investments to ensure that all Delta levees meet a minimum standard and that the levees protecting the Western Delta islands are brought up to a higher standard, given their importance for export reliability.

It is likely that a Delta facility will take at least 15 years to construct. As discussed in the alternative, even after construction of a facility, export agencies plan to continue dual conveyance operations, suggesting that the export community would benefit from the continued maintenance of levees after the construction of a new Delta facility.

APPENDIX D: HABITAT RESTORATION COST ESTIMATES

At the moment BDCP anticipates the restoration of more than 80,000 acres of habitat, including tidal, seasonal and transitional habitat.[19] The cost of this restoration program is estimated at $2.96-$3.85 billion.[20] The scale and estimated cost of this alternative is 50% of the midpoint of this cost range.

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[19] BDCP draft Chapter 3.1, page 3.14. http://baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx

[20] BDCP draft Chapter 8, table 8-50. http://baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx

Secretary Ken Salazar Department of the Interior 1849 C St, N.W. Washington DC 20240	Secretary John Laird California Natural Resources Agency 1416 Ninth Street, Suite 1311 Sacramento, CA 95814
Commissioner Michael Connor Bureau of Reclamation 1849 C Street NW Washington DC 20240	Deputy Secretary Jerry Meral California Natural Resources Agency 1416 Ninth Street, Suite 1311 Sacramento, CA 95814

January 16, 2013

Re: **A Portfolio-Based Conceptual Alternative for BDCP**

Dear Secretary Salazar, Secretary Laird, Deputy Secretary Meral and Commissioner Connor,

We represent a coalition of business and environmental organizations. We are writing to request that the attached conceptual alternative be considered in the BDCP process, including as a stand-alone alternative in the required CEQA/NEPA analyses and Clean Water Act Section 404 alternatives analysis. Our constituents believe strongly in the need for a science-based, cost-effective BDCP plan to help achieve the co-equal goals of restoring the Bay-Delta ecosystem and salmon fishery, and improving water supply reliability for California. None of us believes that the status quo in the Delta is acceptable.

Although many stakeholders have recommended that BDCP consider certain elements that are included in the attached document, we thought it would be most helpful at this point in the BDCP process to offer a *package* of actions and investments that, taken together, represent an alternative that could attract support from a diverse coalition of interests. This is a conceptual alternative, not a proposed BDCP preferred project. We believe that analysis of this alternative will assist BDCP in developing the most cost-effective, environmentally beneficial final BDCP project with the best chance of implementation.

At the heart of the conceptual alternative are two simple principles. First, BDCP must be grounded in the best available science regarding ecosystem management. This approach is essential to designing a successful, long-term plan for a water supply system and ecosystem as complex and dynamic as the Bay-Delta. This approach is also essential to ensure that the BDCP plan can meet legal requirements and receive permits. We applaud Governor Brown and Secretary Salazar for emphasizing their commitment to a science-based approach to BDCP in their July 25, 2012 announcement.

The second core principle is that the BDCP make fiscal sense. The final BDCP plan must be both affordable and financeable or it will ultimately fail. We believe it is imperative at this point in the BDCP process to avoid the economics and financing issues that plagued CALFED and contributed to its eventual failure.

This conceptual alternative was also developed with two practical realities in mind. First, the conceptual alternative has been developed based on the reality that many California water suppliers are looking closer to home to meet their long-term water supply needs and are planning to reduce their demand for water imported from the Bay-Delta. The second reality is that cities and water agencies, as well as federal, state and local budgets are facing significant financial constraints. We believe that it is critically important to balance the timing and need for investments in the Delta with a strategy that also advances continued water agency investments in local water supply development.

This "portfolio-based' approach reflects the real world desire of water suppliers and the public to evaluate the relative benefits of investments both within and outside of the Delta, and is consistent with the increased discussion in BDCP, over the past six months, of South of Delta water supply alternatives.

One of the cornerstones of the conceptual alternative is a proposal to evaluate a 3,000 cfs, single-bore North Delta diversion facility. This facility would produce significant financial savings, in comparison with a larger conveyance facility, while still providing water reliability benefits. In fact, we believe it could produce greater overall benefits at a lower cost, with some of the savings invested in local water supply sources, new South of Delta storage, levee improvements and habitat restoration. For example, investments in proven, cost-effective local water supply strategies can both increase export area water supplies and reduce the risk of disruption from earthquakes and other disasters. Southern California 2010 Urban Water Management Plans have already identified 1.2 MAF of potential additional local supply projects, only a small fraction of which have been factored into Delta planning.

Many of these local investments could provide significant, broad and long-term benefits. For example, a relatively small investment (in comparison with the cost of a new Delta facility) in Delta levees would provide significant water supply benefits beyond those achievable by the BDCP as currently conceived. The BDCP currently anticipates that, even with a large facility, on average, approximately half of the water exported from the Delta would still be pumped by the South Delta facilities (with more than three quarters of exported water pumped from the

South Delta in critically dry years). Therefore, reducing the vulnerability of Delta levees would provide significant water supply reliability benefits for South of Delta water users, particularly in dry years. Such an investment, in combination with local and public funds, would provide additional local benefits in the Delta. We believe that BDCP should include such “win-win” opportunities to collaborate with in-Delta interests.

It is essential not to delay an evaluation of the likely yield of a new Delta facility. The conceptual alternative also calls for the careful analysis of the best science available today regarding water project operations with a new facility. In particular, this approach calls for the analysis of an operations proposal developed by state and federal biologists to conserve and manage a full range of covered Delta fish species, including consideration of the need to protect upstream fisheries resources. We understand that state and federal biologists have undertaken an extensive effort to prepare such an operational scenario. The signatories to this letter have not endorsed these proposed operations. Rather, given that this operational scenario represents an important effort by state and federal biologists, it should be analyzed in the BDCP EIR/EIS, the Effects Analysis and the 404 analysis.

This conceptual alternative includes initial cost estimates that suggest that this approach could provide superior environmental results, increased water supply and greater reliability at a reduced cost. By expanding benefits and lowering costs, this portfolio approach could assist with project financing. We encourage BDCP to include this approach in its analysis of economics and financing issues, and to refine the cost estimates included in this conceptual alternative.

We sincerely believe that this conceptual alternative has the potential to produce superior benefits at a similar or lower cost to water users and the public. Because it is based on the best available science, we believe it would be more readily permittable. It also promises to deliver benefits more rapidly. And, finally, we believe that this approach will be helpful in attracting broader support for BDCP, both within and outside of the Delta.

We request that this conceptual alternative be analyzed as a stand-alone alternative in BDCP’s environmental documents. In addition, we recommend that BDCP use this portfolio approach to compare the potential benefits and impacts of multiple alternatives, including a full range of different conveyance facility capacities. Such comparisons are needed so decision-makers can fully understand the choices they face and can select the optimum portfolio of actions that will best serve the state.

Thank you for your hard work to design an effective plan to meet the challenges we face in the Delta. We hope that this conceptual alternative will continue to advance the discussion. We look forward to an opportunity to discuss the conceptual alternative with you, including how it may best be incorporated into BDCP's analysis.

Sincerely,

Barry Nelson, Senior Policy Analyst
Natural Resources Defense Council

Tony Bernhardt
Environmental Entrepreneurs

Linda Best, President and CEO
Contra Costa Council

Gary Bobker, Program Director
The Bay Institute

Kim Delfino, California Program Director
Defenders of Wildlife

Jonas Minton, Water Policy Advisor
Planning and Conservation League

January 16, 2013

The Honorable Ken Salazar
Secretary
U. S. Department of the Interior
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The Honorable John Laird
Secretary
California Natural Resources Agency
1416 Ninth Street, Suite 1311
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Dr. Jerry Meral
Deputy Secretary
California Natural Resources Agency
1416 Ninth Street, Suite 1311
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The Honorable Michael L. Connor
Commissioner
U. S. Department of the Interior
1849 C Street, N. W.
Washington, DC 20240

Dear Secretary Salazar, Secretary Laird, Deputy Secretary Meral,
and Commissioner Connor:

We are writing to you in advance of the planned release of the public review draft of the Bay Delta Conservation Plan (BDCP), out of a deep concern over the status of this effort. We are united in a desire for a successful project that can be supported by project proponents, Delta stakeholders, and the public. That chance for success is substantially diminished as a result of the alternatives analysis that we have seen thus far. Up to now, the BDCP process has been strongly focused on advancing a large capacity conveyance which, along with the suite of associated conservation measures, will be burdened with large uncertainties and for which a solid business case has not yet been made. These unquantified risks include impacts on listed species, impacts on the Delta landform, hydrology and water quality, open-ended costs to direct water users and to the public, political controversy, and potentially lengthy litigation.

Absent so far has been a portfolio-based alternative that features a smaller conveyance facility with additional, complementary investments in local water supply sources, regional coordination, south of Delta storage, levee improvements, and habitat restoration (see attachment) as advanced in the coalition letter sent by other organizations today. We believe that it is critical to evaluate in detail a conveyance as small as 3,000 cfs, as it would provide considerable water supply benefits to the export community while better protecting broader interests in the Delta. Such a facility would also realize significant financial savings in comparison with a larger conveyance facility, face fewer legal and political challenges, and potentially be completed sooner. With accompanying investments in proven, cost-effective regional water strategies, this approach could increase export area water supplies and reduce the vulnerability of water supplies and Delta infrastructure to disruption from earthquakes and other disasters. We urge that this conceptual alternative be seriously considered in the BDCP process, including the required CEQA/NEPA analyses and the Clean Water Act Section 404 alternatives analysis.

A portfolio approach could produce superior benefits at a similar or lower cost to water users and the public, and at reduced levels of environmental impacts. It has the potential to be consistent with the best available science and, as a result, may be more readily permittable and capable of delivering benefits more rapidly. It would appear that a solid business case can be made for such an alternative; in any event, the business case must be made before any project proceeds.

We fully appreciate the magnitude of the challenges facing the Delta, and urge a comprehensive solution that is both affordable and science-based. We recognize the enormous effort you have undertaken toward this end, and hope that this conceptual alternative will continue to advance the discussion.

Sincerely,

Jerry Brown
General Manager
Contra Costa Water District

Maureen A. Stapleton
General Manager
San Diego County Water Authority

Michael P. Carlin
Deputy General Manager
San Francisco Public Utilities Commission

Walter L. Wadlow
General Manager
Alameda County Water District

Alexander R. Coate
General Manager
East Bay Municipal Utility District

Mark Watton
General Manager
Otay Water District

Bob Filner
Mayor
City of San Diego

Attachment