From: Dante Nomellini, Jr. <dantejr@pacbell.net>
Sent: Tuesday, July 29, 2014 6:04 PM
To: BDCP.comments@noaa.gov
Cc: Dante John Nomellini Sr.
Subject: DJN_Sr Part Four AND Five CDWA Comments on Draft BDCP Plan & EIR_EIS
Attachments: DJN_Sr Part Four CDWA Comments on Draft BDCP Plan & EIR_EIS.pdf.pdf; DJN_Sr Part Five CDWA Comments on Draft BDCP Plan & EIR_EIS.pdf

Attached hereto please find the following two documents:

(1) DJN_Sr Part Four CDWA Comments on Draft BDCP Plan & EIR_EIS" (approx. 2 MB).
(2) DJN_Sr Part Five CDWA Comments on Draft BDCP Plan & EIR_EIS" (approx. 696 KB).

Please reply to this email acknowledging receipt of both of those documents.

Thank you,
Dan Jr.
Attorney for the Central Delta Water Agency

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July 29, 2014

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Re: Draft Bay Delta Conservation Plan and
Draft Bay Delta Conservation Plan EIR/EIS
DJN Sr. Part Four

THE BDCP AND DEIR/EIS HAVE FAILED TO ADEQUATELY ADDRESS CUMULATIVE IMPACTS AS RELATED TO THE REQUIRED ENHANCEMENT OF THE RESOURCE AND AGRICULTURAL VALUES OF THE DELTA.

The Delta Wetlands Project described in BDCP DEIR/EIS Appendix 3D, page 3D-78 should be included for its cumulative impact on agriculture in the Delta and for the increased fresh water consumption due to the conversion of farmland to wetland habitat. Webb Tract and Bacon Island are planned to be reservoirs. Bouldin Island and most of Holland Tract are planned for mitigation including portions converted from farming to habitat.

The San Francisco Bay to Stockton Deep Water Ship Channel Project and the Sacramento Deep Water Ship Channel Project are expected to increase salinity intrusion into the Delta from Suisun Bay and will also require conversion of farmland to habitat to mitigate for spoil siles and the impacts from the deepening and corresponding enlargement of the footprint of the channels. The cumulative impact on agriculture and the impact on fresh water availability must be addressed.

Exhibit 34 is Table 4.4 in Section 4 Biological Resources at page 4-159 from the Draft Delta Plan Program Environmental Impact Report released by the Delta Stewardship Council on November 4, 2011. The exhibit shows the acreage of land in the Delta and Marsh devoted to natural habitat and other uses.

Of the 735,900 acres in the Delta, 178,190 acres consist of Natural Community Types. Of the 106,620 acres in Suisun Marsh, 101,380 acres consist of Natural Community Types.

Delta agricultural acreage is shown to consist of 477,590 acres and Marsh agricultural acreage is shown to consist of only 2,840 acres.

Of the 477,590 acres remaining in agriculture in the Delta as of the date of the compilation by the Delta Stewardship Council, there is likely more public and private conversion of farmland to habitat and it is expected that the Delta Wetlands Project alone will convert an additional 20,000 acres.

Further conversion of Delta agriculture to habitat as a part of BDCP will cumulatively add to the loss thereby resulting in a significant detrimental impact which has not been adequately considered. Exhibit 35 is Table 6-2 from Chapter 6, pages 6-5 & 6 of the BDCP Public Draft. The total requirement for additional habitat is shown to be 153,139 acres plus 20 miles of channel margin habitat. The 20 miles of channel margin habitat could result in conversion of hundreds of additional acres of farmland due to related levee setback and utility relocations.

The impact on farmland is not limited to the acreage directly converted. Other impacts include: buffer zones limiting the use of agricultural chemicals may be imposed; there could be crop damage due to noxious weeds and other pests emanating from the habitat areas; increased trespass, vandalism, refuse and human waste may occur on the habitat area and spill over onto adjoining farmland and increased water consumption. Perhaps more important is the reduction in agricultural base economy including impacts to supporting and dependent businesses and reclamation district assessments which are critical to the continued maintenance of levee systems.

The Economic Sustainability Plan for the Sacramento-San Joaquin River Delta dated January 19, 2012 for which a copy of the Executive Summary is attached as Exhibit 36 shows that the economic sustainability of the Delta is greatly dependent on agriculture.

Water Code Section 85054 provides that the co-equal goals of water supply reliability and restoring the Delta ecosystem "shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource and agricultural values of the Delta as an evolving place."

The impacts of BDCP including 10 or more years of disruption due to construction; the physical impacts of construction and facilities including power lines; the so-called reuse of tunnel muck; conversion of farmland to habitat; the disputive actions affecting levees; the water quality degradation; and disruption of Delta water supply must be cumulatively rigorously explored and objectively evaluated not only as to degrading impacts but as to impacts to the legally required enhancement of the Delta.

THE BDCP STRATEGY OF HABITAT IN LIEU OF WATER FOR FISH RESULTS IN SIGNIFICANT ADVERSE IMPACTS WHICH HAVE NOT BEEN ADEQUATELY ANALYZED.

Conversion of farmland to habitat significantly increases the consumption of fresh water.

Farming in the Delta requires drainage and periodic control of vegetation in order to sustain farming. The lands within the Delta lowlands are at or below five feet above mean sea level. Most are below the water level in the adjoining channels. With few exceptions, the Delta uplands due to their close proximity to sea level have a natural high water table. As such constant drainage is required as a part of the normal farming practices. Without such drainage, the lands would become inundated by reason of seepage and rising groundwater or would experience substantially raised groundwater. The resulting condition would be a body of water or a highly naturally vegetated area served by a high water table.

Evaporative losses from an open body of water and from riparian vegetation are much higher than from the same area subjected to farming. Natural vegetation even if not riparian or part of a wetland will typically consume more water than typical Delta farming.

Attached hereto as Exhibit 37 is Table A-5 from DWR Bulletin 168 - October 1978, page A-10 showing the 1976-77 Estimated Crop Et Value for the Delta Service Area. For October 1976 through September 1977 the data shows:

Alfalfa	45.8 inches
Tomatoes	34.3 inches
Field Corn	33.8 inches
Riparian Veg and Water Surface	67.8 inches

The conversion of farmland growing field corn to typical wetland habitat in the Delta will result in over 2 acre feet per acre per year of additional consumptive use of fresh water.

California Water Plan Update 2009, Vol. 4 Reference Guide - Topic Crop Water Use, Article 19, contains the "Historical Estimates of Agricultural and Wetland Water Use in the San Joaquin-Sacramento River Delta" by Morteza N. Orang, Richard L. Snyder, Sara Sarreshteh.

The study included both uplands and lowlands and concluded:

> "For the entire Delta, the Etc for the wetlands, cattails and tules was about 16% (1998), 20% (2000) and 22% (2001) higher than the agriculture-crop land-use group, which included irrigated pasture, alfalfa, all field crops, sugar beets, irrigated grain, rice, truck crops, tomato, orchard, vineyard and non-irrigated grain (Figure 7-9)."

See Exhibit 38 which contains pages 1 and 7 from said study.

Breach and relocation of levees in the tidal zone of the Delta could increase salinity intrusion thereby adding to the need for fresh water outflow. Increasing the tidal prism, shortening the path of bay salinity to intrude into the Delta and enlarging channels at locations constituting a restriction to intrusion are all factors which must be analyzed.

The Delta is complex and impacts will vary significantly as to the location and the operations of the SWP and CVP. An example of the negative impacts which must be analyzed is the flooding of Lower Liberty Island.

The increase in the tidal prism created by the flooding of Lower Liberty Island has been found to have caused juvenile salmon migrating to the ocean to be pushed from their normal Sacramento River migration route back up into the flooded portion of Lower Liberty Island thereby further exposing such fish to the risk of predation, stranding and detrimental temperatures. (See Exhibit 29 excerpts from "Insights into the Problems, Progress, and Potential Solutions for Sacramento River Basin Native Anadromous Fish Restoration", April 2011 by Dave Vogel).

The impact of breaching and setting back levees to create habitat has impacts on flood control which are not adequately analyzed, There are obvious impacts to adjoining areas from seepage and wave action and more complex impacts to flood flows in the various channels. Delta levees should be viewed as a system where changes in one part of the system will likely result in changes to other parts of the system. Setting back a levee could result in increased downstream flow of floodwaters that could be disastrous.

Breaching and setting back levees to create wetlands on Swamp and Overflowed lands is in direct conflict with the State's obligation to reclaim such lands for productive use.

Construction of levees along and surrounding the Swamp and Overflowed lands was pursuant to the efforts of the State of California to reclaim the Swamp and Overflowed Lands granted to it by the United States. Such lands were acquired by the State of California from the Federal Government by virtue of the Act of Congress of September 28, 1850 (9 U.S. Stats. at Large, p. 519), generally known as the Arkansas Act. In accepting the grant from the Federal Government, the State is bound to carry out in good faith the objects for which the grant was made and thereby assumed an obligation to reclaim the lands.

> "The object of the Federal government in making this munificent donation to the general States was to promote the speedy reclamation of the lands and thus invite to them population and settlement, thereby opening new fields for industry and increasing the general prosperity." See Kimball v. Reclamation Fund Commissioners (1873) 45 Cal. 344, 360.

The State patented such lands into private ownership conditioned on efforts towards reclamation. Swampland Districts (Reclamation Districts) organized pursuant to state law were typically the mechanism whereby such reclamation efforts were accomplished.

The local governmental entities and interests built the levees for the primary purpose of draining the Delta lands and tracts so that they could be put to productive use which in many cases was farming. The original non-project levees were in a number of cases later improved as a part of a federal project and are now "project levees".

Conversion of Swamp and Overflowed land to wetlands and particularly the breaching or removal of levees for such purpose would appear to be in violation of the State obligations to reclaim. If the levees are project levees, the entire purpose of the federal project and expenditure would be destroyed.

THE BDCP DEIR/EIS HAS FAILED TO ADEQUATELY ANALYZE THE CUMULATIVE EFFECT OF VARIOUS ACTIONS ON WATER DEMAND AND THE CONSEQUENCES OF THE ACTIONS TO MEET SUCH DEMAND.

There is clearly an increased demand for water from the creation of additional habitat. The BDCP also includes water transfers to meet existing demands and additional acquisitions of water and water rights to meet environmental needs. The consequences of extracting such water from some other use and the source itself has not been analyzed. Paper water such as results from many surface water transfers with groundwater substitution can deplete surface water and lower groundwater levels with detrimental consequences. The transfer of water based on land fallowing even if the farmer is adequately compensated will have consequences to the economy including agriculturally related business and employment.

There is a disconnect between the BDCP and the over-commitment of available water supply. The SWP contract renewal process which should restore contract provisions to curtail the use of intermittently available water to support permanent or long term demand such as for M & I development and growing permanent crops has been piecemealed out of the BDCP.

The cumulative impacts of the two efforts are not adequately considered. Water transfer and surplus water provisions in the SWP contracts and CVP contracts are intertwined with the extent of the impacts arising out of the BDCP.

THE BDCP DEIR/EIS HAS FAILED TO CONSISTENTLY AND OBJECTIVELY APPLY ASSUMPTIONS AS TO CLIMATE CHANGE.

Climate change is in major part driven by increasing temperatures. The BDCP analyzes climate change impacts in the plan area but ignores the impacts in the areas receiving water exported from the Delta. Temperature could adversely affect living conditions in the desert areas. Demand for water could greatly increase due to increased evaporation and the cost of

increased consumptive use could affect demand for water and more importantly demand and the reasonableness of continued desert development. In the agricultural areas where there is the greatest demand for water exported from the Delta, temperature increases could adversely affect the growing of certain crops and thereby affect water demand. Increased evapotranspiration could also be a factor in that there will be greater demand for extraction of groundwater from overdrafted basins such that they are exhausted. Farming with only the water available through exports from the Delta could become unsustainable.

The impacts of climate change in the export service area could affect the assumed demand for water and the assumed availability of funding for the plan and projects.

THE BDCP DEIR/EIS DEFERS MITIGATION AND FACTS TO INCLUDE FEASIBLE MITIGATION MEASURES.

As detailed in other comments to DEIR/EIS, the document does not reflect a good faith effort to analyze or provide feasible mitigation.

Worthy of note in particular is the approach to mitigation of impacts to agriculture which has no substance, no funding and no consideration as to alternative locations of habitat upstream or downstream of the Delta.

Also of particular note is the reliance on other programs for addressing water quality degradation without any detailed analysis of the ability of such programs to reduce naturally occurring constituents and the long term contributions of salinity from natural sources and the CVP and SWP deliveries of water to the west side of the San Joaquin Valley.

THE BDCP DEIR/EIS FAILS TO RIGOROUSLY EXPLORE AND OBJECTIVELY EVALUATE ALL REASONABLE ALTERNATIVES.

The Alternate 4 which is preferred by DWR includes three (3) new 3000 cfs intakes on the Sacramento River connected to two 40 ft. diameter tunnels which extend to the CVP and SWP export pumping facilities in the south Delta. The water exporter purpose is to avoid export pumping restrictions intended to reduce the entrainment of special status fish at the south Delta export pumping facilities. The theory is that when such fish are exposed to entrainment at the south Delta export facilities, pumping from the new intakes on the Sacramento River can take place without harm to special status fish. It is projected that about one-half the time export pumping will continue from the south Delta and when the new intakes on the Sacramento River are used at least 3000 cfs will continue to be exported using the south Delta export pumping facilities. Water quality in the interior Delta and south Delta is expected to degrade due to the removal of the good quality Sacramento River water from the "common pool".

The hope is that fish such as Delta smelt will stay in the south Delta with the poorer quality water and not migrate to the good quality water at the new intake locations on the

Sacramento River. There is considerable uncertainty as to the effectiveness of the plan and "adaptive management" is incorporated. Adaptive management incorporates a Governance Structure which in reality is controlled by the export water contractors. DWR and the USBR are included but close ties with the export water contractors preclude any significant independence. The plan is expensive and much of the cost is intended to be pushed onto the general taxpayers rather than the water export contractors who are the direct beneficiaries.

Other alternatives should be rigorously explored and objectively evaluated.

The main features of an additional alternative analysis are:

1. An independent analysis of the availability of surplus water for export by the SWP and CVP should be performed recognizing 1) the need to provide water to meet the present and future needs including fish and wildlife needs in the Delta and other areas of origin; and 2) the need for carryover of stored water to meet the D-1641 water quality objectives in the event of a reoccurrence of a six year drought comparable to the 1929-1934 or 1987-1992 whichever is most constraining. The availability should be specified by year type.
2. Reduce exports to such surplus amounts.
3. Curtail export pumping at the south Delta intakes in response to the actual real time exposure of fish to entrainment.
4. Adjust outflow for fish to keep endangered fish away from the influence of the south Delta pumps.
5. Continue experimentation with fish deflectors at critical points to minimize improvements to fish.
6. Improve screens at the existing south Delta intakes.
7. Upon adoption of flow criteria by the SWRCB adjust the determination of the availability of surplus water for export.
8. From such surplus water availability determine and deduct any amounts necessary to meet water right settlement obligations. From the remainder determine the amounts that can be reliability supplied for permanent development and permanent crops.
9. The balance of the water, if any, should be limited by the SWP and CVP to uses which do not lead to permanent demand.
10. Use of water transfers should also be limited to uses which do not lead to permanent demand.
11. Improve all Delta levees to a minimum standard equal to or comparable to the USACE PL84-99 agricultural standard with a twenty-two foot crown width. Those levees deemed most critical to water export and protection of infrastructure should be improved to a higher standard. Provide funding for emergency response consistent with the armored corridor concept.
12. Provide State and Federal Funds to assist urban areas to become self-sufficient with the goal of eliminating reliance on imported water.

13. Provide State and Federal Funds to assist local agencies to develop groundwater recharge and storage projects which can utilize surplus wet period flows.
14. Return the Kern Water Bank to State Control.
15. Restore the Standard Provisions to the State Water Contracts so as to limit the use of surplus water and article 21 water to uses which do not lead to permanent demand. Adjust the entitlements to the amounts that can be reasonably expected to be developed.
16. Use an Independent Science Board to direct the application of surplus water to test variations in fish flow protection which when proven with actual results could be incorporated in revisions to water quality objectives.
17. Re-examine opportunities for increased storage of wet year flows with particular emphasis on groundwater recharge and offstream storage.
18. Encourage public agencies and employees to be sensitive to conflicts of interest and to work to regain public confidence.
19. Until there is a better understanding of environmental needs, there should not be any fixed period take permits.

This submittal constitutes Dante John Nomellini, Sr.'s Part Four with Exhibits 34 through 38.

Yours very truly,

DANTE JOHN NOMELLINI, SR.
Manager and Co-Counsel

Table 4-4
Area (in Acres) of Natural Community Types in the Delta and Suisun Marsh

Natural and Agricultural Community Types	Delta	Suisun Marsh	Area of Overlap[a]	Total for Delta and Suisun Marsh[b,c]
Tidal open water	56,150	25,720	1,160	80,750
Tidal brackish marsh	360	8,330	360	8,330
Tidal freshwater marsh	6,980	–	–	6,980
Nontidal open water	10,520	30	–	10,550
Nontidal brackish marsh, managed	2,540	49,490	1,860	50,180
Nontidal freshwater marsh, unmanaged	3,260	10	10	3,260
Nontidal freshwater marsh, managed	14,300	–	–	14,300
Alkali seasonal wetlands	5,470	170	100	5,530
Grasslands with vernal pools	8,930	1,150	10	10,080
Riparian forest	8,980	–	–	8,980
Riparian scrub	7,030	170	20	7,180
Riparian invasives	170	–	–	170
Grassland	53,480	16,310	580	69,200
Inland dune scrub	20	–	–	20
*Agricultural lands				
Alfalfa	82,410	–	–	82,410
Irrigated pasture	51,690	–	–	51,690
Corn	108,220	–	–	108,220
Rice	3,760	–	–	3,760
Vineyard	28,850	–	–	28,850
Orchard	17,960	–	–	17,960
Other cultivated crops	114,940	–	–	114,940
Other agriculture	69,760	2,840	120	72,480
Oak woodland	–	490	–	490
Developed	80,110	1,890	100	81,910
Undefined	–	20	–	20
Total[c]	**735,900**	**106,620**	**4,320**	**838,250**

Note: Numbers have been rounded to the nearest 10 acres.

[a] The Delta and Suisun Marsh areas overlap. The acreage shown represents the extent of overlapping acreage for each natural and agricultural community type.

[b] The total represents the combined acreage of the Delta and Suisun Marsh areas. The overlapping acreage is counted only once.

[c] The total may not equal the sum of the acreages for individual types because of rounding.

Table 6-2. Implementation Schedule for Natural Community Protection and Restoration Conservation Measures

Conservation Measure	Total Requirement (acres)	Minimum Amount of Acquisition or Restoration by 5-Year Time Periods[a]									
		Near-Term (acres)		Early Long-Term (acres)	Late Long-Term (acres)						
		1 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50
BDCP Reserve System											
CM3 Natural Communities Protection and Restoration											
Valley/foothill riparian	750	400	350								
Vernal pool complex	600	200	200	200							
Alkali seasonal wetland complex	150		120	5	5	5	5	5	5		
Grassland	8,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000		
Managed wetland [b]	1,500	500	1,000								
Managed wetland (natural community)[c]	6,600	1,400	1,900	600	550	550	550	550	500		
Cultivated lands (non-rice)	48,125	7,700	7,700	6,700	5,200	5,200	5,200	5,200	5,225		
Cultivated lands (rice)	500	100	100	100	100	100					
Cultivated lands (rice or equivalent)[d]	3,000	300	400	400	400	400	400	400	300		
Nontidal marsh[e]	50	10	15	5	5	5	5	5			
Total Acquisition	**69,275**	**11,610**	**12,785**	**9,010**	**7,260**	**7,260**	**7,160**	**7,160**	**7,030**		
CM4 Tidal Natural Communities Restoration											
Tidal brackish emergent wetland	6,000	1,000	1,000	2,050	350	400	400	400	400		
Tidal freshwater emergent wetland	24,000	4,425	4,425	4,450	2,150	2,150	2,150	2,150	2,10		
Tidal perennial aquatic (below MLLW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Tidal wetland of any type and transitional uplands[f]	35,000	4,150	4,150	4,150	4,150	4,600	4,600	4,600	4,600		
Subtotal: Tidal wetland restoration[g]	**65,000**	**9,575**	**9,575**	**10,650**	**6,650**	**7,150**	**7,150**	**7,150**	**7,100**		
CM5 Seasonally Inundated Floodplain Restoration	**10,000**			**1,000**	**1,800**	**1,800**	**1,800**	**1,800**	**1,800**		
CM6 Channel Margin Enhancement (miles)	**20**	**5**	**5**		**5**		**5**				
CM7 Riparian Natural Community Restoration	**5,000**	**400**	**400**	**300**	**750**	**750**	**750**	**800**	**850**		
CM8 Grassland Natural Community Restoration	**2,000**	**570**	**570**	**340**	**100**	**100**	**100**	**100**	**120**		
CM9 Vernal Pool and Alkali Seasonal Wetland Complex Restoration[h]											
Vernal pool complex[i]	67	20	20	27							
Alkali seasonal wetland[j]	72	29	29	5	5	4					

Conservation Measure	Total Requirement (acres)	Minimum Amount of Acquisition or Restoration by 5-Year Time Periods[a]									
		Near-Term (acres)		Early Long-Term (acres)	Late Long-Term (acres)						
		1 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50
CM10 Nontidal Marsh Restoration[e]											
Nontidal marsh restoration	1,200	200	200	100	100	150	150	150	150		
Managed wetland	500	250	250								
Total Restoration[k]	**83,839**	**11,044**	**11,044**	**12,422**	**9,405**	**9,954**	**9,950**	**10,000**	**10,020**		
Total Acquisition and Restoration[l]	**153,139**	**22,654**	**23,829**	**21,432**	**16,665**	**17,214**	**17,110**	**17,160**	**17,050**		

Notes:

[a] See text for the rationale for the requirements by time period. In some cases, acquisition or restoration within a time period may be greater than shown in order to occur in rough step with permanent and long-term temporary loss and meet the NCCP standard for rough proportionality of impacts and conservation.

[b] Managed wetland preservation to meet Objective SMHM1.1 for salt marsh harvest mouse.

[c] Managed wetland preservation to meet Objective MWNC1.1 to support populations of native waterfowl.

[d] 4,240 acres of rice, or "rice equivalent" will be protected to contribute to giant garter snake conservation (1,500 acres under Objective GGS1.4, and 2,740 acres under Objective GGS3.1). Rice equivalent is rice protection, nontidal restoration, or muted tidal restoration that meets the reserve design criteria described in CM4. Up to 1/3 of the rice equivalent may also consist of grasslands adjacent to protected or restored aquatic habitat. For the giant garter snake net effects analysis and the cost assumption chapter, it was assumed that 1,250 acres of the rice equivalent will consist of muted tidal restoration, which is a subset of the 24,000 acres of freshwater emergent wetland restoration. The difference between the total rice equivalent requirement (4,240 acres) and the assumed acreage of muted tidal restoration (1,250 acres) is 3,000 acres, rounded to the nearest 100.

[e] 50 of the 1,200 acres of nontidal marsh restoration could substitute for 50 acres of nontidal marsh protection if those 50 acres meet habitat enhancement requirements for tricolored blackbird.

[f] The preservation or restoration of transitional uplands adjacent to tidally restored sites to accommodate sea level rise. Grassland preservation that occurs to achieve this objective does not contribute toward the 8,000 acres of grassland preservation or the 2,000 acres of grassland restoration. Some or all of the transitional uplands may become tidal during the 50-year permit term or beyond, as a result of sea level rise.

[g] The 65,000 acres includes restored tidal natural communities and transitional uplands to accommodate sea level rise (i.e., land available for upslope migration of tidal wetlands as sea level rises) during the permit term and beyond the permit term.

[h] Alkali seasonal wetland and vernal pool complex restoration objectives requires no net loss of wetted acres. Actual restoration of alkali seasonal wetland and vernal pool complex acreage will depend on the amount lost and the density of wetted acres in the restored areas. Restoration numbers reflect that required with maximum allowable impacts and assumed density of wetted area of 15%.

[i] The acreage of vernal pool complex restored will depend on the amount removed. Projects will avoid direct and indirect effects on vernal pools to the extent feasible, Restoration acreage will be based on impact acreage, and the amount necessary to achieve no net loss of wetted acres. Restoration will take place consistent with the rough proportionality standard described in Section 6.1.2, *Maintaining Rough Proportionality.*

[j] The acreage of alkali seasonal wetland complex restored will depend on the amount permanently impacted. Projects will avoid direct and indirect effects on alkali seasonal wetlands to the extent feasible, Restoration acreage will be based on impact acreage, and the amount necessary to achieve no net loss of wetted acres. Restoration will take place consistent with the rough proportionality standard described in Section 6.1.2, *Maintaining Rough Proportionality.*

[k] Excludes channel margin enhancement (in miles).

[l] This total includes 10,000 acres of seasonally inundated floodplain, which overlaps with restoration and protection for riparian and other natural communities. The 10,000 acres are not included in the total acreage of natural communities to be restored and protected under Objective L1.1.

MLLW = mean lower low water; NCCP = natural community conservation plan

Economic Sustainability Plan for the Sacramento-San Joaquin River Delta

Executive Summary

19 January 2012

DELTA PROTECTION COMMISSION

The Delta is a dynamic environment with rich natural and productive resources.

The Sacramento-San Joaquin River Delta is a unique place of economic, environmental, historic and cultural significance. The land and water resources of the Delta support significant agricultural and recreation economies, and the Delta also has an important role as an infrastructure hub for water, energy, and transportation. The region's rich history boasts of bustling, river-based commerce before the automobile age, and its cultural uniqueness includes the only rural town in America built by early Chinese immigrants. As the largest estuary on the west coast of the Americas, the Delta also is a place of striking natural beauty and ecological significance that is struggling with serious environmental degradation problems. Although surrounded by growing cities, the Delta remains a highly-productive agricultural area with rural charms, landscapes, and waterscapes not found elsewhere in California.

In recent years, there has been great concern over increasing environmental degradation in the Delta and over court decisions that reduced the quantity of water delivered to southern California through the state and federal water project intakes in the south Delta to protect endangered fish. Combined with additional concerns about the stability of the Delta's levee system, these concerns led the California legislature to pass the Delta Reform Act of 2009. The Act created the Delta Stewardship Council and charged it with developing a Delta Plan to achieve the coequal goals of "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem."

Recognizing the potential impact of the Delta Plan on the people and economy of the Delta, the Delta Reform Act stated that the coequal goals of water supply reliability and restoring the Delta ecosystem "shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place." Among the measures to address this goal, the Delta Protection Commission was tasked with developing this Economic Sustainability Plan to inform the Delta Stewardship Council's development of the Delta Plan.

The concept of economic sustainability and the objective to "protect and enhance the unique cultural, recreational, natural resources, and agricultural values of the California Delta as an evolving place," can be interpreted in different ways. In economic terms, most stakeholders agreed that a minimum requirement is to maintain the economic value of the entire Delta economy in the future, and many believed in a stronger interpretation of enhancement of every key economic sector. The Fifth Staff Draft of the Delta Stewardship Council's Delta Plan uses performance measures that follow this stronger interpretation of economic sustainability where growth in one sector is not a substitute for deterioration in another sector. The peer review panel for the ESP found this to be too strong, and

recommended that sustainability should allow for substitution between sectors. In contrast, some non-Delta water interests take a narrower view, and claim that "evolving place" means that the Delta is in a state of inevitable decline and only a handful of "unique" values need to be protected.

The Plan interprets sustainability as maintaining and enhancing the economic prosperity of the Delta, and specifically considers the potential of recreation and tourism to offset possible declines to agriculture. Regardless of the interpretation of economic sustainability, it is clear that the Stewardship Council must consider the Delta economy when preparing the Delta Plan. In addition, most stakeholders agree that the Delta Reform Act requires the protection of the cultural and historical heritage and the long-term economic viability of the Delta's historical Legacy Communities.

The Economic Sustainability Plan (ESP) measures the key elements of the Delta economy, develops strategies to enhance the economy, and analyzes the impacts of several important proposals for the Delta Plan on the region's economic sustainability. The analysis in this Economic Sustainability Plan shows that it is possible to protect and enhance the Delta economy and be consistent with the coequal goals. The ESP finds that a large investment in strengthening the Delta's levee and emergency response systems is a cost-effective approach to improving water supply reliability, economic sustainability in the Delta, and reliable energy, transportation, and water infrastructure that serves statewide interests. The ESP also finds that most proposals for ecosystem restoration can be consistent with economic sustainability.

THE ECONOMY AND INFRASTRUCTURE OF THE DELTA: BASELINE, TRENDS, AND STRATEGIES FOR IMPROVEMENT

The boundaries of the Legal Delta are shown in Figure A. The Delta Protection Act of 1992 defined the Delta boundaries including the Primary and Secondary Zone and created the Delta Protection Commission, charging it with developing a Land Use and Resource Management Plan for the Primary Zone. The majority of the Delta's 738,000 acres of land is in the rural and agricultural Primary Zone. The population of the Primary Zone is approximately 12,000 and has remained steady in the nearly 20 years since the passage of the Delta Protection Act.

The Legal Delta, including both the Primary Zone and Secondary Zone, contains significant portions of five counties, Contra Costa, Sacramento, San Joaquin, Solano and Yolo, and a small rural corner of Alameda County. The Delta includes parts of several large cities including Antioch, Pittsburg, Stockton, Sacramento, Tracy, and West Sacramento. The legal Delta has a population of 571,000, according to the 2010 Census, which has increased by about 200,000 people—more than 50 percent—in the 20 years since the 1990 Census. All of the population growth, and virtually all of the Delta's urbanized land, is located within the Delta's Secondary Zone.

The Primary Zone economy is export-oriented and creates jobs and income far in excess of the population and workforce that resides in the Primary Zone. The Secondary Zone and the counties surrounding the Delta supply the Primary Zone economy with a workforce, services, manufacturing, and transportation that add value to the agricultural, energy, and other resource-based output of the Delta.

The ESP calculated measures of industry concentration for the Legal Delta with measures of both employment and output, and identified three clear areas of relative concentration: 1) Agriculture; 2) Transportation, Warehousing, and Utilities; and 3) Construction, Housing, and Real Estate. All of these areas are potentially impacted by the Delta Plan. Since there is great interest in recreation and tourism as an economic driver in the Delta, it is significant to note that the tourism-oriented Arts, Entertainment, and Recreation sector tied with Information and Management for the lowest concentration of the 21 industries analyzed in the Legal Delta. However, water-based recreation in the Delta is a significant economic driver, and as discussed in Chapter 8, most of its economic impact is in the retail and hospitality sector.

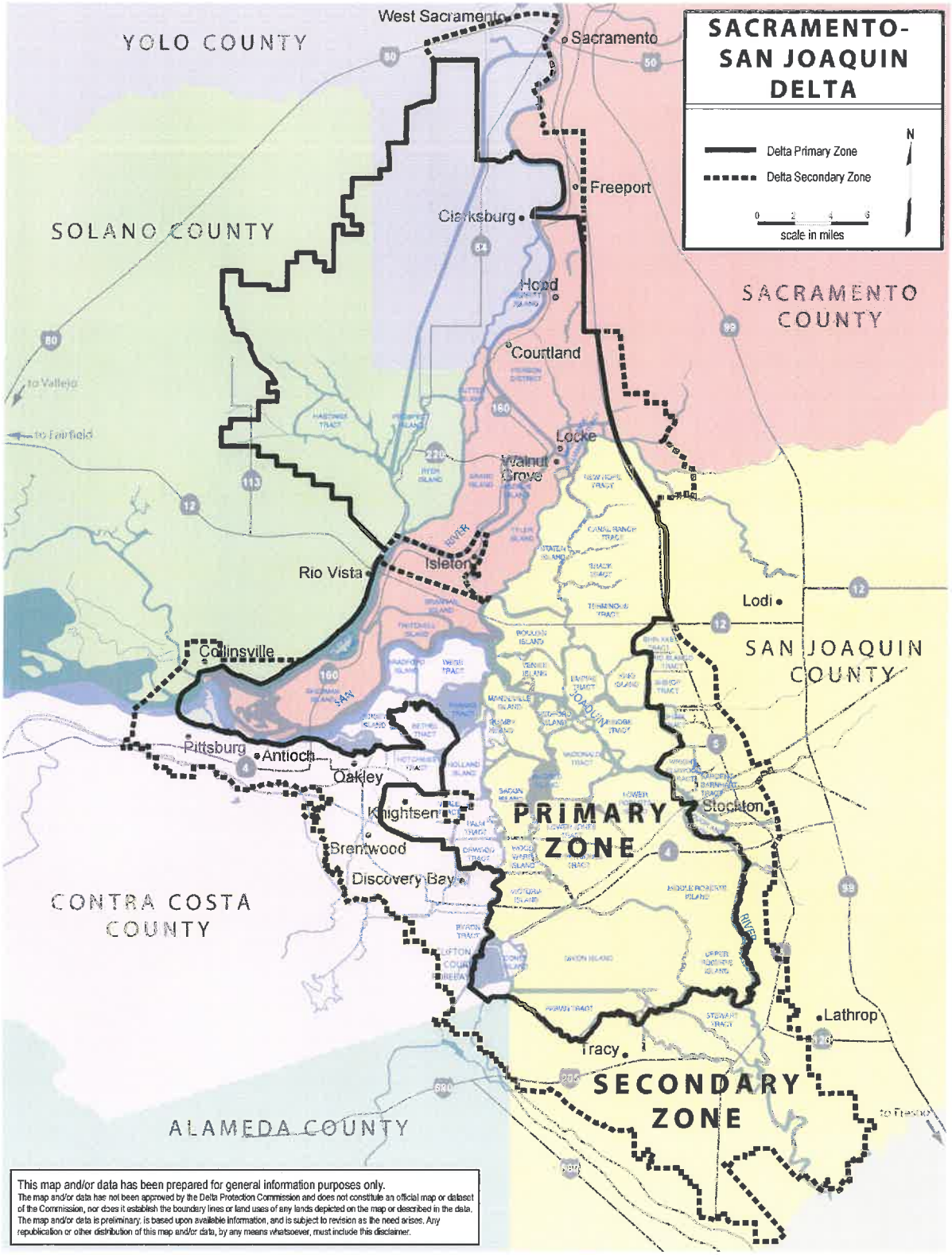
The Delta Reform Act of 2009 and the Delta Protection Act of 1992 are primarily concerned with the natural resources of the Delta and the economic activity sustained by those resources, such as agriculture and outdoor recreation. In addition, the resources of the Delta support significant water, energy, and transportation infrastructure that serves the Delta, regional, and state economies, and an important commercial and recreational salmon fishery throughout the state. Indeed, an important economic cluster in the Delta is Transportation, Warehousing, and Utilities, and their development is directly dependent on maintaining and enhancing the Delta as a regional transportation and energy hub. The ESP conducted a closer analysis of three important areas for the Delta's economic sustainability: agriculture; recreation and tourism; and infrastructure. The remainder of this section looks more closely at the baseline, trends, and strategies for enhancing these areas of the Delta economy.

DELTA AGRICULTURE

Agriculture is the dominant land use in the Delta. Farmland makes up about two-thirds of the area of the Delta, and nearly 80 percent of all Delta farmland is classified as Prime Farmland, the highest quality designation given by the California Farmland Mapping and Monitoring Program. In contrast, less than 20 percent of all farmland in California is Prime Farmland.

Corn and alfalfa occupy the greatest acreage in the Delta, whereas processing tomatoes and wine grapes generate the most crop revenue. These crops have important links to three value-added manufacturing sectors in the region: wineries, canneries, and dairy products. Asparagus and pears are historically high-value crops in the Delta and continue to be significant contributors, although acreage of both has decreased. The majority of

Figure A: Map of Primary and Secondary Zones of the Sacramento-San Joaquin Delta



pumpkins and blueberries grown in California come from the Delta and reflect the variety of products. Total agricultural revenues in the Delta were estimated at $795 million in 2009, including $702 million in crop revenue and $93 million from animals and animal products.

Nearly 80 percent of Delta farmland is used for lower-value field and grain crops, pasture, and grazing lands. These lands are important to supporting animal agriculture in the Delta and the larger region, most notably the California dairy industry where scarcity and costs of forage crops has become a challenge. Animal agriculture is less prevalent in the Delta than in other areas of the San Joaquin Valley, but milk is still the fifth most valuable agricultural commodity produced in the Delta, and animal production generates about 12 percent of Delta farm revenue. In contrast, milk is the most valuable agricultural product in San Joaquin County and other nearby areas in the San Joaquin Valley, and the Delta is an important source of local feed.

High-value vineyards, truck, and deciduous crops generate close to 70 percent of crop revenue in the Delta on about 20 percent of the Delta's farmland, and account for 80 percent of the economic impact of Delta agriculture when value-added manufacturing such as canneries and wineries are included. Like other areas in the Central Valley, Delta agriculture is expected to continue a gradual trend towards higher-value crops over time, increasing the contribution of Delta agriculture to the regional economy.

The economic impact analysis estimates that Delta crop and animal production has an economic impact of roughly 9,700 jobs, $683 million in value added, and $1.4 billion in output in the five Delta counties. Across all of California, the economic impact of Delta agriculture is approximately 13,000 jobs, $819 million in value added, and $1.6 billion in output.[1]

As seen in Table A, when related value-added manufacturing such as wineries, canneries, and dairy products are included with the impact of Delta agriculture, the total economic impact of Delta agriculture is roughly 13,200 jobs, $1.059 billion in value-added, and $2.647 billion in economic output in the five Delta counties. Including value-added manufacturing, the statewide impact of Delta agriculture is about 25,000 jobs, $2.135 billion in value-added, and $5.372 billion in economic output. Additional details and analysis of Delta agriculture can be found in Chapter 7 of the Economic Sustainability Plan.

[1] The economic impact analysis of agriculture, recreation, and tourism utilizes the IMPLAN model to calculate what are commonly known as the "ripple" effects on other industries such as the purchase of inputs in the local economy and local consumer spending supported by the income. Jobs are reported as annual monthly averages and will vary by season. Value added measures total regional income generated by the activity and is comparable to gross domestic product. Output sums the total revenue of enterprise which is higher than the value added or income created by the enterprise.

Table A: Total Economic Impacts of Delta Agriculture and Recreation and Tourism*

Sector	Employment	Labor Income	Value Added	Output	Source Table
5-COUNTY IMPACTS					
Agriculture	13,179	$593,975,736	$1,059,453,520	$2,647,124,544	Table 13 p.125
Recreation & Tourism	3,064	$104,320,642	$175,862,370	$329,229,232	Table 36 p.174
CALIFORNIA IMPACTS					
Agriculture	25,125	$1,252,216,824	$2,135,095,400	$5,372,014,752	Table 14 p.126
Recreation & Tourism	5,317	$208,104,490	$353,312,020	$654,415,364	Table 37 p.174

*For additional details on economic impacts see the listed source tables and associated discussions.

DELTA RECREATION AND TOURISM

Recreation is an integral part of the Delta economy, generating roughly 12 million visitor days of use annually and approximately $250 million dollars in visitor spending in the Delta each year. Of the roughly 12 million visitor days spent in the Delta each year, approximately 8 million days are for resource-related activities (e.g., boating and fishing), 2 million days are for right-of-way-related and tourism activities (e.g., bicycling and driving for pleasure), and 2 million days are for urban parks-related activities (e.g., picnicking and organized sports).

Boating and fishing have the biggest economic impact, and are estimated to generate nearly 80 percent of the recreation and tourism spending in the Delta, including significant expenditures on lodging, meals, supplies, marina services, and fuel. In addition to visitor spending, non-trip spending such as boat purchases and marina rentals are estimated at roughly $60 million annually for total recreation-related spending of $312 million annually in the Delta. As seen in Table A above, Delta recreation and tourism supports over 3,000 jobs in the five Delta counties. These jobs provide about $100 million in labor income and a total of $175 million in value added to the regional economy. Across all of California, Delta recreation and tourism supports over 5,300 jobs, and contributes about $353 million in value added.

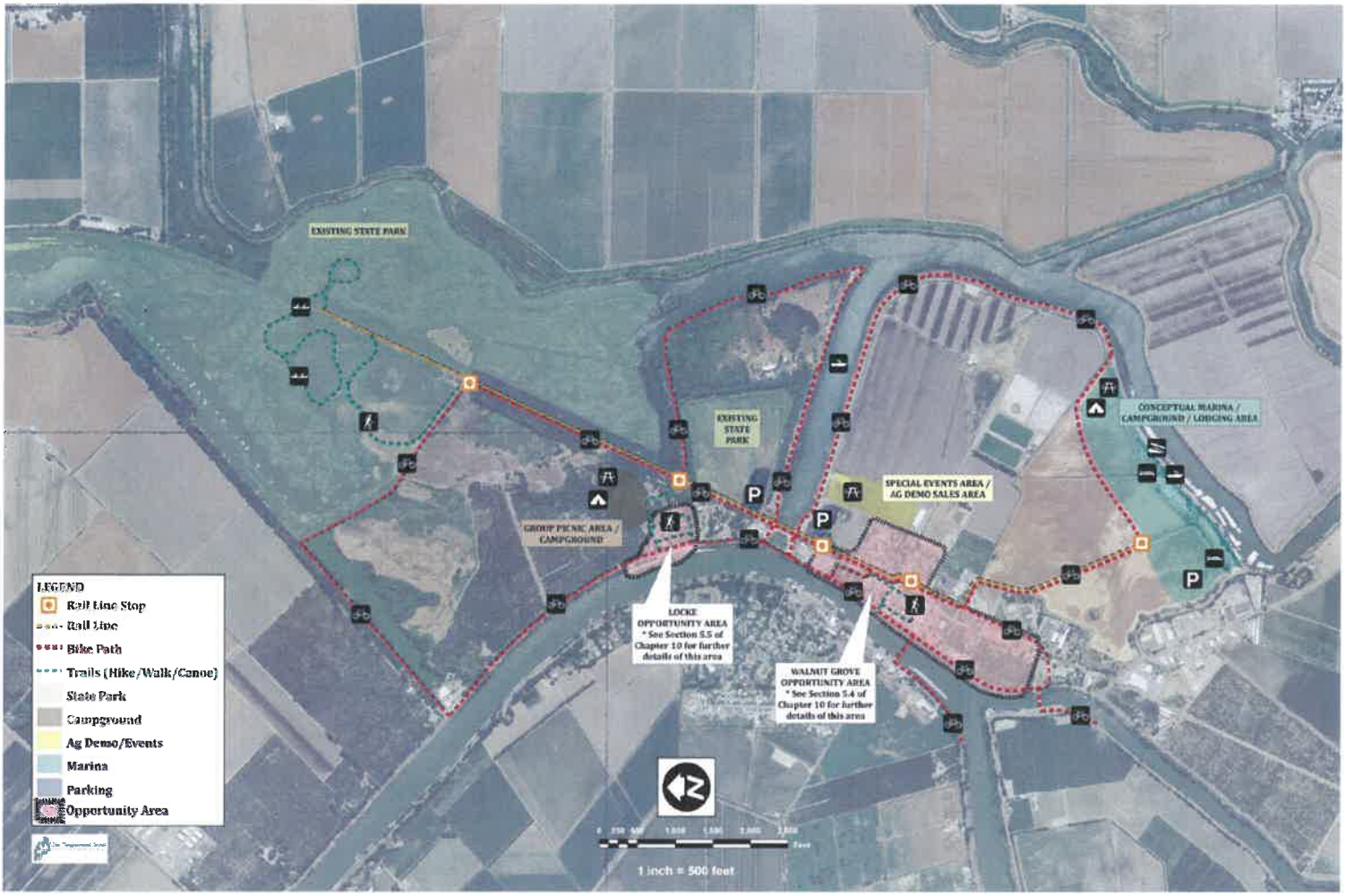
Despite significant population growth in the market area, the available data suggests that boating and fishing activity in the Delta has grown little in the past 20 years. Boat registrations, employment at marinas and boating-related industries, and the number of marinas are virtually unchanged over the past two decades. This trend could reflect concerns about water and fishing quality in the Delta, and could also be influenced by the poor economy, high fuel prices, and broader trends in boating and fishing participation across the nation.

While boating and water recreation will remain the largest piece of the Delta recreation industry, land-based activities such as agritourism, wine tasting, wildlife watching, historic and cultural tourism, bicycling, and driving for pleasure are likely to drive future growth in Delta recreation. The majority of visitors to the Delta are from Northern

California, an area with great population growth potential but also with nearby locations with successful land-based recreation and tourism economies that compete with the Delta for visitors. The residents of a dozen counties around the Delta represent the principal market for future growth in Delta visitation. This market area has a population of approximately 11.9 million people, and projections indicate this figure could grow by about 50 percent or 5.7 million people by 2050.

Because of slow expected growth in boating recreation and the relatively small base of land-based tourism in the Delta, we project Delta recreation and tourism will grow more slowly than the regional population. If resource quality and recreational facilities are maintained and improved so that the Delta retains its current level of competitiveness as

Figure B: Conceptual Proposal for Walnut Grove/Locke/Delta Meadows Focal Point Complex



a recreation destination, visitation could increase by 3.4 million visitor days and in-Delta spending could increase by nearly $80 million, roughly 35 percent, over 40 years.

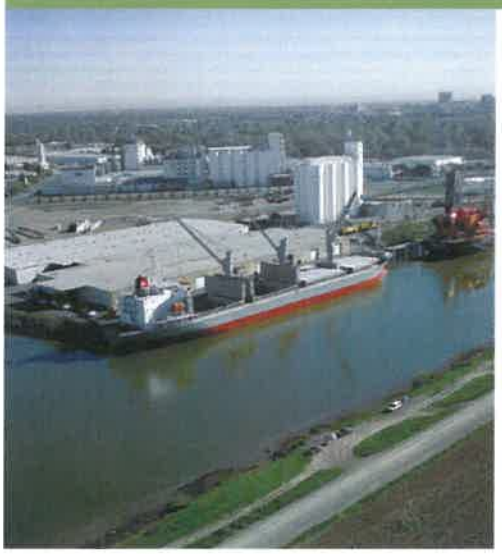
A plan for the enhancement of recreation in the Delta centers on five location-based strategies: specific waterways, points of interest, focal point complexes, natural habitat areas, and urban edge areas that surround the Delta. Recreation development in the Delta should be coordinated, consistent, branded, and marketed. A National Heritage Area could be an effective means to brand and coordinate strategies to enhance resource-based recreation, agritourism, and historical and cultural tourism.

Figure B is a conceptual illustration of what a viable focal point complex could look like in the historic area of Walnut Grove and Locke. The figure shows coordinated development of a public park at Delta Meadows with a private sector catalyst development in a modern marina and recreation facility that is tied together with a network of non-motorized trails that include revitalized, historic commercial districts of the Legacy Communities. Successful execution of this type of plan would require improved flood control and a facilitator to encourage and coordinate the public and private investments. Additional details on recreation and tourism enhancement strategies are in Chapter 8 of the Economic Sustainability Plan.

DELTA INFRASTRUCTURE SERVICES

The Delta is a critical infrastructure hub for the regional and state economy. While the Delta's importance to the state water system is well-known, its importance to energy, transportation, and in-Delta municipal and industrial water supplies is less appreciated. As discussed in Chapter 5 and mapped in Appendix D, all of these infrastructure services are vulnerable to floods, earthquakes, and sea-level rise, and require the continued maintenance and enhancement of the Delta's levee system.

The Delta is an important energy resource for California. The Delta contains the largest natural gas production field in California, as well as its largest natural gas storage facility below McDonald Island in the central Delta. In addition to heating and cooking, natural gas fuels the majority of California's electricity supply, and natural gas power plants in the five Delta counties, many within the legal Delta, produce 20 percent of California's natural gas-powered electricity. Major electricity transmission lines in the Delta interconnect California with the Pacific Northwest and carry roughly 10 percent of the state's summer electricity load. Gasoline and aviation fuel pipelines crossing the Delta supply large portions of Northern California and Nevada. Besides these energy resources, wind and solar resources are being studied for further development. Taken together, the Delta's contribution to the state's energy network is comparable to its contribution to the state water system.



The Port of West Sacramento on the Sacramento Deep Water Channel, which with the Port of Stockton and the Port of Oakland form the M-580 Marine Highway

The Delta also contains increasingly important parts of the inter-regional transportation network that supports the regional and in-Delta economy. As east-west transportation corridors to the north and south of the Delta become increasingly congested and constrained, the demand for through-Delta transportation is growing rapidly. The ports of Stockton and Sacramento are focal points of regional economic development and rely on through-Delta shipping channels. The ports' marine highway corridor project will increase and diversify the water freight that moves through the Delta and relieve air pollution and traffic in the region. Traffic data shows large increases on highways in the Secondary Zone, as well as through the middle of the Primary Zone on State Route 12, and smaller but significant increases on State Route 4 in the Primary Zone. Through-Delta railways are also an important link in the transportation system.

The Secondary Zone of the Delta and the surrounding counties also draw a significant portion of their municipal and industrial water supplies from the Delta. Changes to Delta water quality—whether an increase in salts or organic carbon—have important effects on urban water supplies in and around the Delta. Significant deterioration of in-Delta water quality could increase water treatment costs by tens of millions of dollars each year and require hundreds of millions of dollars in capital investment in advanced treatment facilities for utilities serving Delta urban areas.

TWO KEY ISSUES FOR ECONOMIC SUSTAINABILITY IN THE DELTA

DELTA LEVEES AND ECONOMIC SUSTAINABILITY

Since the early 20th century, the current-day Delta levee system has provided flood control that allows productive agricultural and urban uses of land, channels water for urban and agricultural uses, protects critical infrastructure, and creates a desirable setting for boating and water-based recreation in an environment unique in California. The levee system is the foundation on which the entire Delta economy is built. Therefore, a sustainable Delta economy requires a sustainable levee system.

It has been the goal of the state and the federal government, working through the Department of Water Resources (DWR), the U.S. Army Corps of Engineers (USACE), and the local reclamation districts, to meet the Delta-specific PL 84-99 standard since 1982 when DWR and USACE produced a joint report on the Delta levees, which recommended the basis for this standard. If effectively used, funds currently in the pipeline should bring the Delta levees close to achieving this goal. When these funds have been expended, more than $698 million will have been invested in improvements to the Delta levees since 1973. These improvements have created significantly improved Delta levees through modern

engineering and construction, making obsolete the historical data that is still sometimes used for planning or predicting rates of levee failure.

Three approaches can help all jurisdictions and planners further reduce the risks resulting from the failure of the Delta levees. These approaches are: (1) build even more robust levees, (2) improve both regular maintenance and monitoring and flood fighting and emergency response following earthquakes, and (3) improve preparedness for dealing with failures after they occur. With regard to the first approach, the big question is not whether they should be improved to the Delta-specific PL 84-99 standard. Indeed, the independent review panel for the ESP agreed that PL 84-99, not HMP, is the minimum responsible levee standard. Instead, the key question is which levees should be improved to a higher standard in order to support and enhance various in-Delta, regional, state and federal interests, and to address hazards posed by not only floods, but also earthquakes and sea-level rise. Our conclusion is that these improvements would be advantageous on 300 to 600 miles of Delta levees, not only for flood control and protection against earthquakes and sea-level rise, but because they also would allow for planting vegetation on the water side of the levees—an essential component of Delta ecosystem repair. These further-improved levees would have wider crowns to provide for two-way traffic and could easily be further widened at selected locations to allow the construction of new tourist and recreational facilities out of the statutory floodplain.

Improvement of most Delta "lowland" levees, the levees that protect lands below sea-level, and selected other levees to this higher standard would cost $1 to $2 billion in base construction costs over the cost of reaching the PL 84-99 standard. Including vegetation and habitat enhancement, total program costs might be in the order of $4 billion, similar to the cost projected by the PPIC (2007) in their "Fortress Delta" alternative. While the billions of dollars required to build levees to this higher standard is a large investment, it is a cost-effective joint solution that simultaneously reduces risk to all Delta infrastructure. While a $12 billion investment in isolated conveyance may allow for somewhat larger water exports, it doesn't protect other critical infrastructure, and billions in additional investments would still be required to protect highways, energy, and other water and transportation infrastructure. Just as a species by species approach may be an inefficient and ineffective way to protect ecosystems, a system by system approach is an inefficient and ineffective way to protect the state's infrastructure. Chapter 5 contains a detailed assessment of the Delta levee system.

SUSTAINABLE LEGACY COMMUNITIES: WHERE THE CHALLENGES AND STRATEGIES COME TOGETHER

Economic opportunities and constraints facing the Delta's Legacy Communities mirror those in the broader Primary Zone. The current economies of the Legacy Communities are agriculturally based, providing support services and limited workforce housing for the Primary Zone's largest industry as well as some housing for retirees and service

and professional workers who commute into nearby urban areas such as Sacramento. Despite the current base in agriculture and rural bedroom and retirement communities, much of the revitalization strategies for Legacy Communities are based on growing their appeal as destinations for recreation and tourism. This includes promoting the emerging agritourism sector—including wine and local foods—as an economic development theme.

However, a strict and multi-layered regulatory framework places limits on economic development opportunities within the Delta's Legacy Communities. The aging and occasionally sub-standard building stock needs improvement, potentially utilizing redevelopment of existing buildings and/or a limited amount of new development in order to accommodate visitor- and local-serving enterprises. New investment is especially important because the existing base of hospitality- and tourism-related enterprises is very limited and insufficient to attract and capture significant tourist activity. The most developed recreation and tourism enterprises in the Delta are campgrounds and marinas that serve water-based recreation; these are mostly located outside the Legacy Communities and often outside the Primary Zone.

An already burdensome regulatory environment has been made significantly worse by the recent remapping of FEMA flood zones. All of the Legacy Communities along the Sacramento River have either been or are in the final process of being remapped into the 100-year floodplain. The requirements of this designation can make major property investments financially infeasible, and many stakeholders are concerned that the flood zone designation could cause the Legacy Communities to slowly wither away. It is clear that the economic sustainability of the Legacy Communities is dependent on levee and flood-control investments as well as other strategies to address the constraints of flood zone designation.

Despite these challenges, the Legacy Communities have significant historical, cultural, and economic values and the potential to become attractive destinations for visitors and support a more prosperous, higher quality of life for residents. Chapter 10 includes more detailed visions and strategies for Legacy Communities, including case studies of Walnut Grove, Locke, and Clarksburg.

Recreational boating is popular throughout the Delta

IMPACT OF WATER SUPPLY AND ECOSYSTEM RESTORATION PROPOSALS ON THE DELTA ECONOMY

Current proposals for new water supply and ecosystem restoration projects have serious implications for economic sustainability in the Delta. The isolated conveyance and many habitat restoration proposals are being developed in the Bay Delta Conservation Plan (BDCP), and the Economic Sustainability Plan relies on the November 2010 draft of the BDCP to describe these proposals. In addition, other proposals regarding Delta levees, land use regulation, and economic development have been made by the Delta Stewardship Council, Department of Water Resources, the Public Policy Institute of California (PPIC), and the Delta Vision Strategic Plan.

Figure C summarizes the estimated impacts of the proposed actions. In Figure C, red shading indicates a negative effect of $20 million or more annually, orange is negative effect of less than $20 million annually, yellow represents little or no effect, and green are economic benefits. Three proposals—isolated conveyance, 65,000 acres of tidal marsh, and six-island open water area—have negative effects in all three critical areas of the economy, with a negative impact exceeding $20 million in at least one area. These proposals are clearly incompatible with economic sustainability at their current levels.

Overall, Delta agriculture would be the most affected sector with total impact of BDCP proposals ranging from $62 to $227 million dollars in revenue per year, an 8% to 29% decline in Delta agriculture. This estimate does not include losses from permanent flooding of islands advocated by some, or the risk that a large capacity conveyance could be used to increase water exports and degrade water quality beyond current standards. The majority of Delta policy proposals considered would also have negative impacts on infrastructure services, and recreation and tourism impacts are a mix of potentially positive and negative effects. The effects of all these proposals are analyzed in detail in Part 2 (Chapters 6 through 9).

THE CO-EQUAL GOALS, COST-BENEFIT ANALYSIS, AND ECONOMIC SUSTAINABILITY

The co-equal goals, economic sustainability for the Delta, and cost-benefit analysis have been put forward as guiding frameworks for the recommendations from this report by the Delta Stewardship Council and the independent review panel of the ESP. It is important to understand that there are conflicts between these frameworks, and therefore it is impossible to construct a set of recommendations that is best from all viewpoints. The primary objective is to provide recommendations that are consistent with the co-equal goals and economic sustainability as envisioned in the Delta Reform Act of 2009 so they can be incorporated into the Delta Plan. However, it also important to note that cost-benefit analysis is the traditional, scientifically accepted approach to analyzing these types of issues, and that such an analysis would be enormously informative to the Delta Plan.

Figure C: Summary of Impacts of Policy Scenarios

Proposals/Impacts	Agriculture	Recreation & Tourism	Infrastructure Services
1. Isolated Conveyance Facility (15,000 cfs tunnel in dual conveyance system)			
	1) Water quality losses $20m-$80m annually, increased risk 2) Footprint displaces $10m to $15m in annual crops	Potential fishing benefits, but negative effects from North Delta intakes and water quality are larger	1) Water quality negative impacts on M&I supplies 2) Risk of lost support for levee investment
2. Habitat Proposals			
a) Yolo Bypass Fishery Enhancements	Losses $7m to $10m annually, dependent on flood duration	Potential recreation benefits	Flood control benefits
b) San Joaquin River Floodplain Restoration	1) BDCP proposal - 10,000 acres, up to $20m annual crop loss 2) Paradise cut alternative: 2,000 acres - collaborative plan	Potential recreation benefits	Flood control benefits
c) 65,000 acres of tidal marsh restoration	$18m to $77m annual crop losses, low losses in Suisun Marsh/ highest losses in South Delta	South Delta tidal marsh likely negative recreational impacts	1) South Delta & Cache Slough tidal marsh could increase organic carbon in municipal water supplies 2) Suisun Marsh and west Delta restoration could have positive impacts on Delta water quality
d) "Natural Communities" Protection: 32,000 acres of easements and 8,000 acres rangeland conversion	Agricultural losses range from $5m to $25m annually	Wildlife viewing could generate new recreation visits, although spending is low for this activity	Minimal impact
3. Six Island Open Water Scenario			
	$12m in annual crop losses	Recreation impact very large as located in most popular boating area. Eliminates wind-protected channels and 40% of Delta marinas in immediate area exposed to negative impact	Empire Tract has new Stockton water intake. Organic carbon impact to Stockton water supply, and silting of shipping channel
4. DSC Covered Actions Regulation			
	Potentially large impacts on all sectors. Deter investments with increased cost and uncertainty.		
5. Delta Vision Economic Development Strategies			
	National Heritage Area designation could be useful (DPC feasibility study in progress). Delta Investment Fund is useful, but prospects for funding are very uncertain. Other ideas have limited potential and feasibility.		

While there is no comprehensive cost-benefit analysis of current proposals for the Delta, it is important to note that the recently released DRMS Phase 2 analysis is a comprehensive cost-benefit analysis of a limited, and somewhat out-of-date group of scenarios. The findings from DRMS phase 2 have tremendous implications for the Delta and the approach to the levee system and conveyance. Below are some key findings from the DRMS Phase 2[2]:

- Improving levees had the highest benefit-cost ratio of any Delta risk reduction strategy, including isolated water conveyance that was assumed to cost only $4.9 billion.
- Water exports account for only 20% of the economic costs from a large earthquake event that would flood between 10 and 30 Delta islands.
- Water exports account for less than 2% of the economic costs of more-common flood events due to high water and storms.
- Water exports account for 0% of the loss of life from any type of flood hazard event.

While the DRMS Phase 2 report evaluated upgrading all Delta levees to the PL 84-99 standard, it did not evaluate further upgrading levees to a seismically resistant standard as recommended in the ESP. However, the August 20, 2007 preliminary draft of DRMS Phase 2 did consider an "Improved Levees" scenario that included seismic upgrades of 100 miles of south Delta levees. The results reported in the preliminary draft found that a scenario with seismic upgrades to levees had lower costs and 40% higher risk reduction benefits than the peripheral canal scenario. Consistent with the conclusions in the ESP, the preliminary draft of DRMS Phase 2 found seismic upgrades to levees improved water supply reliability. Despite seismic upgrades to only 100 miles of levees, the preliminary draft found the improved levee scenario reduced the water supply impact of the largest earthquake by two-thirds while simultaneously protecting other valuable infrastructure and Delta property.[3]

These findings have enormous implications for risk management in the Delta, and highlight some of the potential conflicts between cost-benefit analysis and the co-equal goals. Both the preliminary and final draft of DRMS Phase 2 found improving levees has the highest economic benefit per dollar invested and lowest total cost. Levee upgrades perform well in cost-benefit analysis of Delta options, because they reduce risk in all areas including water conveyance, other infrastructure, and in-Delta property. In contrast,

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2 These findings are not what is highlighted by the Department of Water Resources in the Executive Summary of DRMS phase 2, but are easily found and calculated from the results tables in the analysis.

3 A copy of the preliminary draft was requested in a December 15, 2011 letter to the Department of Water Resources (DWR). DWR responded quickly, the January 9, 2012 transmission letter states: "Please note the information dates back to 2007 and is stamped as preliminary. It was also not part of the DRMS Phase 2 public draft, because it was not further considered for in-depth analysis in Phase 2. Therefore, I do not recommend using this information for either planning or design purposes. With these caveats in mind, we hope you still find the attached information useful." A complete copy of the correspondence and material provided by DWR is included in Appendix N of the ESP.

isolated conveyance only protects water exports which DRMS clearly identifies as a minority of the economic risks.

With respect to the co-equal goals, the ESP recommends a set of actions that would dramatically change the Delta from its current state, and is consistent with the co-equal goals of the Delta Reform Act. The ESP would significantly improve water supply reliability by creating a seismically resistant levee system with enhanced emergency response that effectively addresses the risk of catastrophic, long-term interruption of water deliveries, the most important goal of water supply reliability. The ESP recommends many actions to improve the Delta ecosystem, including actions that support the Delta economy and even some actions that have significant costs for the Delta economy. The ESP presents a positive view of the Delta's economic future with strategies that are informed and realistic about the challenges it faces. Because of its lower implementation cost and compatibility with Delta economic interests, the ESP is also a more feasible and realistic alternative to achieving the coequal goals than plans built around large, isolated water conveyance facilities such as the BDCP.

The Delta Stewardship Council and others are very interested in the potential for gains in the recreation economy to offset potential losses in agriculture. It is important to be realistic about this potential and understand current trends. Over the past twenty years, the trend for recreation in the Delta has been flat despite rapid population growth in the surrounding region. Delta agriculture has grown in value, and shares many of the same strong growth prospects as agriculture in the rest of the state. This is in strong contrast to the 1980s when agriculture was a struggling industry and boating was growing fast. In the 1980s, it might have been reasonable to project these trends would continue and recreation would supplant agriculture as the economic driver in the Delta. As discussed in the ESP, this transition did not occur over the past 20 years when conditions were more favorable than they are today. Given the history of the past 20 years and current economic and demographic trends, a transition to a recreation economy should be viewed as far less likely today than it was 25 years ago. Thus, it would be irresponsible to develop Delta plans that count on a reversal of this pattern and dramatic growth in recreation and tourism.

Despite these cautions, it is important to note that the ESP does show that there is significant potential to grow and enhance the Delta's recreation and tourism sectors. Improving recreation assets can not only provide economic benefits, but also enhance the quality of life in the Delta and people outside the Delta who could take advantage of these opportunities. However, growing recreation and tourism requires strategic investment and reinvestment in facilities, improved flood control, and scaling back some of the water supply and habitat proposals that conflicts with recreation and tourism. A loss of agriculture on the low end of the range of potential BDCP impacts, about 10%, could potentially be offset by growth in other areas and consistent with economic sustainability in the Delta. Proposals that would reduce the capacity of conveyance and

reduce habitat acreage goals by 70-80 percent (i.e. 3,000 cfs conveyance, about 25,000 acres of habitat restoration, one small flooded island) were not evaluated formally, but could be consistent with economic sustainability if combined with substantive actions to improve recreation and tourism, enhance legacy communities, support value-added opportunities in agriculture, and provide adequate flood control to support public safety and encourage the needed investments.

White Egrets are a common sight throughout the Delta.

RECOMMENDATIONS FOR ECONOMIC SUSTAINABILITY IN THE DELTA

The recommendations are organized around eight topics. Considering the recommendations together, the overall strategy is consistent with economic sustainability in the Delta and the coequal goals of increased water supply reliability and ecological restoration. Chapter 12 includes more detailed descriptions and discussion of the proposed recommendations.

LEVEES AND PUBLIC SAFETY RECOMMENDATIONS

- Improve and maintain all non-project levees to at least the Delta-specific PL 84-99 standard.
- Improve most "lowland" levees and selected other levees to a higher Delta-specific standard that more fully addresses the risks due to earthquakes, extreme floods, and sea-level rise, allows for improved flood fighting and emergency response, provides improved protection for legacy communities, and allows for growth of vegetation on the water side of levees to improve habitat.
- The Delta Levee Subventions and Special Projects Program should continue to be supported.
- Transfer to a regional agency with fee assessment authority on levee beneficiaries responsibility for allocating funds for the longer-term improvement of Delta levees and the maintenance of regional emergency preparedness, response, and recovery systems developed jointly with the Delta counties and state and federal governments.
- In addition to providing funding for longer-term levee improvements, provide on-going funding for regular levee maintenance and expanded emergency preparedness, response, and recovery.
- Reduce or eliminate regulatory impediments to action by the creation of a one-stop permitting system for selected activities within the Delta including dredging, levee construction, and ecosystem restoration.
- Fully and expeditiously implement the recommendations contained in the SB27 Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force report.
- Formally identify the Delta region as the geographic basis for integrated response, mutual aid, decision making, and information sharing processes during major floods.

GENERAL RECOMMENDATIONS FOR ECONOMIC SUSTAINABILITY

- Designate a regional agency to implement and facilitate economic development efforts. The main tasks of this entity are: marketing and branding, permitting and regulatory assistance, planning and coordination, and strategically managing the Delta Investment Fund as described in Section 1 of Chapter 11.
- Economic impacts of habitat creation and development of facilities for export water supply should be fully mitigated.
- Land use planning and regulation must be clear and consistent across agencies.

RECOMMENDATIONS FOR THE ECONOMIC SUSTAINABILITY OF AGRICULTURE

- Maintain and enhance the value of Delta agriculture.
- Limit the loss of productive farmland to urbanization, habitat, and flooding to the greatest practical extent.
- Protect Delta water quality and water supplies for agriculture.
- Support growth in agritourism.
- Support local value-added processing of Delta crops.

RECOMMENDATIONS FOR ECONOMIC SUSTAINABILITY OF RECREATION AND TOURISM

- Protect and enhance private enterprise-based recreation with support from state and local public agencies.
- Focus recreation development in five location-based concepts:
  - Enhance Delta waterways
  - Develop dispersed points of interest and activity areas
  - Create focal point destination complexes with natural areas, parks, Legacy Communities, marinas, historic features, and trails
  - Expand public access to natural habitat areas
  - Create recreation-oriented buffers at Delta urban edges
- Implement Economic Sustainability Plan through specific strategies such as consistency planning and regulation refinement, coordination among state and local agencies, obtaining strategic levee protection for Legacy Communities and key recreation areas, designating a marketing and economic development facilitator, and providing key funding for catalyst projects and agencies.

RECOMMENDATIONS FOR INFRASTRUCTURE

- Planning of levee investments must fully consider the economic value of infrastructure services along with all other benefits.

- All owners and operators of infrastructure that depend on Delta levees must contribute to levee system investment and maintenance.
- Protect and improve Delta water quality and supply for agricultural, municipal and industrial uses.
- Ensure that future development of infrastructure in the Delta is aligned with economic sustainability strategies.
- Support expansion and development of the ports.

RECOMMENDATIONS FOR HABITAT AND ECOSYSTEM IMPROVEMENTS

- Emphasize strategies with little or no conflict with the Delta economy such as increased fresh water flows, growth of vegetation on enlarged levees, restoration of mid-channel berms, and reactivation of upstream floodplains.
- Expanded and enhanced flood bypasses can be consistent with economic sustainability if agencies work with local stakeholders to minimize and mitigate economic impacts.
- Tidal marsh habitat plans should be significantly reduced.
- Increased open-water habitat in the Delta is not recommended.
- Include recreation facility development in habitat enhancement plans when possible.
- Habitat restoration should start on State-owned land and only occur on private lands with willing sellers consistent with local land use plans.

RECOMMENDATIONS FOR WATER SUPPLY RELIABILITY

- Continuing the through-Delta conveyance is important to economic sustainability in the Delta and can be consistent with water supply reliability within and outside the Delta.
- A dual conveyance plan with a large, 15,000 cfs isolated conveyance facility has large conflicts with Delta economic sustainability and has high risk for Delta stakeholders.
- Options to large isolated conveyance must be fully and consistently evaluated.

RECOMMENDATIONS FOR RESEARCH AND MONITORING

- Conduct a comprehensive and credible cost-benefit analysis to analyze Delta alternatives.
- New recreation data is needed and should be updated regularly.
- Maintain an Economic Sustainability Scoreboard to track progress.
- The Delta Science Program should sponsor more engineering and economic studies in addition to ecological research.
- Increase alignment among the various research and planning initiatives.

Photo credits: Adrian Mendoza and Department of Water Resources

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TABLE A-5
1976-77 Estimated Crop Et Values
Delta Service Area
(in inches)

Land Use Category	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Total Oct.76-Sep.77	Oct.77	Total Nov.77-Oct.77
Sacramento-San Joaquin Delta															
Irrigated Pasture	3.2	1.5	1.0	0.7	1.5	3.6	5.4	4.8	6.9	7.7	6.4	4.7	47.4	3.4	47.6
Alfalfa	3.2	1.5	1.0	0.7	1.5	3.2	4.9	4.4	6.5	7.5	6.5	4.9	45.8	3.4	46.0
Deciduous Orchard (Fruits & Nuts)	2.6	1.5	1.0	0.7	1.5	2.7	3.8	4.0	6.1	7.4	6.1	4.3	41.7	2.6	41.7
Tomatoes	2.4	1.5	1.0	0.7	1.5	1.9	2.2	2.6	4.0	8.2	6.0	2.3	34.3	1.9	33.8
Sugar Beets	2.4	1.5	1.0	0.7	1.5	1.9	2.2	3.7	7.6	8.3	6.4	4.4	41.6	2.4	41.6
Grain Sorghum (Milo)	2.4	1.5	1.0	0.7	1.5	1.9	2.2	2.0	5.9	7.3	4.3	2.5	33.2	1.9	32.7
Field Corn	2.4	1.5	1.0	0.7	1.5	1.9	2.2	2.3	5.7	6.9	5.1	2.6	33.8	1.9	33.3
Dry Beans	2.4	1.5	1.0	0.7	1.5	1.9	2.2	1.7	5.7	6.2	2.7	2.5	30.0	1.9	29.5
Safflower	2.4	1.5	1.0	0.7	1.5	1.9	2.5	4.8	8.7	7.7	4.4	2.5	39.6	1.9	39.1
Asparagus	2.4	1.5	1.0	0.7	1.5	1.9	2,2	1.0	3.5	7.7	6.4	4.7	34.5	2.4	34.5
Potatoes	2.4	1.5	1.0	0.7	1.5	1.9	2.2	1.7	4.3	7.4	5.5	2.8	32.9	1.9	32.4
Irrigated Grain	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	1.8	1.0	1.0	1.6	26.1	1.6	24.7
Vineyard	2.4	1.5	1.0	0.7	1.5	1.9	2.2	2.8	5.3	6.5	5.3	3.4	34.5	2.4	34.5
Rice	3.2	1.5	1.0	0.7	1.5	1.9	2.8	5.6	8.8	9.8	8.1	5.5	50.4	3.4	50.6
Sudan	2.4	1.5	1.0	0.7	2.0	4.3	5.7	4.8	6.9	7.7	4.9	4.7	46.6	2.4	46.6
Misc. Truck	2.4	1.5	1.0	0.7	1.5	1.9	3.2	4.6	6.7	7.4	5.2	3.7	39.8	1.9	39.3
Misc. Field	2.4	1.5	1.0	0.7	1.5	1.9	2.2	2.4	6.1	7.4	5.0	1.9	34.0	1.9	33.5
Double Cropped with Grain															
Sugar Beets	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	1.8	4.2	5.2	5.8	37.7	3.4	38.7
Field Corn	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	1.8	4.3	6.3	6.1	39.2	2.7	39.5
Grain Sorghum (Milo)	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	1.8	2.7	6.1	5.2	36.5	1.9	36.0
Sudan	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	3.6	7.7	4.9	4.7	41.6	1.9	41.1
Dry Beans	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	3.1	7.6	3.5	1.5	36.4	1.9	35.9
Tomatoes	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	2.3	6.6	6.0	5.2	40.8	1.9	40.3
Lettuce	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	4.1	7.4	5.3	4.9	42.4	2.4	42.4
Misc. Truck	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	2.3	6.6	6.0	5.2	40.8	2.4	40.8
Misc. Field	2.4	1.5	1.0	0.7	2.0	4.3	5.7	3.1	4.1	7.4	5.3	4.9	42.4	3.4	43.4
Fallow Lands 1/	2.4	1.5	1.0	0.7	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	14.0	1.0	12.6
Native Vegetation 2/	2.4	1.5	1.0	0.7	1.4	3.7	3.8	2.1	2.3	2.6	2.3	2.0	25.8	1.6	25.0
Riparian Veg. & Water Surface	4.6	2.4	1.4	0.8	1.9	4.5	7.4	6.6	9.7	11.8	9.7	7.0	67.8	4.3	67.5
Urban	1.6	0.8	0.6	0.7	1.0	1.0	1.9	2.4	2.4	2.5	2.4	1.9	19.2	1.6	19.2

1/ Applies also to nonirrigated grain.
2/ Applies also to nonirrigated orchards and vineyards

Metric conversion: inches times 25.4 equals millimetres.

Historical Estimates of Agricultural and Wetland Water Use in the San Joaquin-Sacramento River Delta

By

Morteza N. Orang, Richard L. Snyder, Sara Sarreshteh

This report presents the results of a study comparing the water requirements (ET_c) of irrigated crops and wetland vegetation (tules and cattails) in the San Joaquin-Sacramento River Delta for different water years 1998 (wet), 2000 (average), and 2001 (dry). These are the most recent dry, normal, and wet years, which were used in the California Water Plan Update 2005. The main purpose of this project was to specifically customize the daily water balance program "Delta Evapotranspiration of Applied Water" or "DETAW" to analyze historical climate data to compute the water requirements of wetland vegetation that change from year-to-year. To do the analysis, DETAW was modified to sum the number of hectares of irrigated land for each of the 168 sub-areas within the Delta from 1921 to 2003. DETAW uses the product of reference evapotranspiration (ET_o) and a crop coefficient (K_c) factor to estimate well-watered evapotranspiration ($ET_c = ET_o \times K_c$). Using the surface areas, volumes of water corresponding to ET_c were computed for wetland vegetation on each the sub-areas over the period of record. The K_c values, crop type, and the percentages of the season to identifiable growth dates b, c, and d were changed to K_c factors and dates for tules and cattails to estimate daily and monthly ET data for wetland vegetation. The growth dates were b (10% ground cover), c (75% ground cover), and d (the onset of senescence). The model K_c values for tules and cattails, grown in standing water, were reported by Drexler et al. (2006). Since it is unlikely that the entire Delta area would have standing water for a full season, and the K_c factors are likely to be lower without the water, the standing-water K_c values provide an upper-limit boundary for estimating ET_c, and lower values are likely in most years. In drought years, the soil may dry out sufficiently to cause evapotranspiration (ET) reducing water stress, and a stress (K_s) coefficient might be needed to reduce the actual ET (ET_a) to a level lower than ET_c.

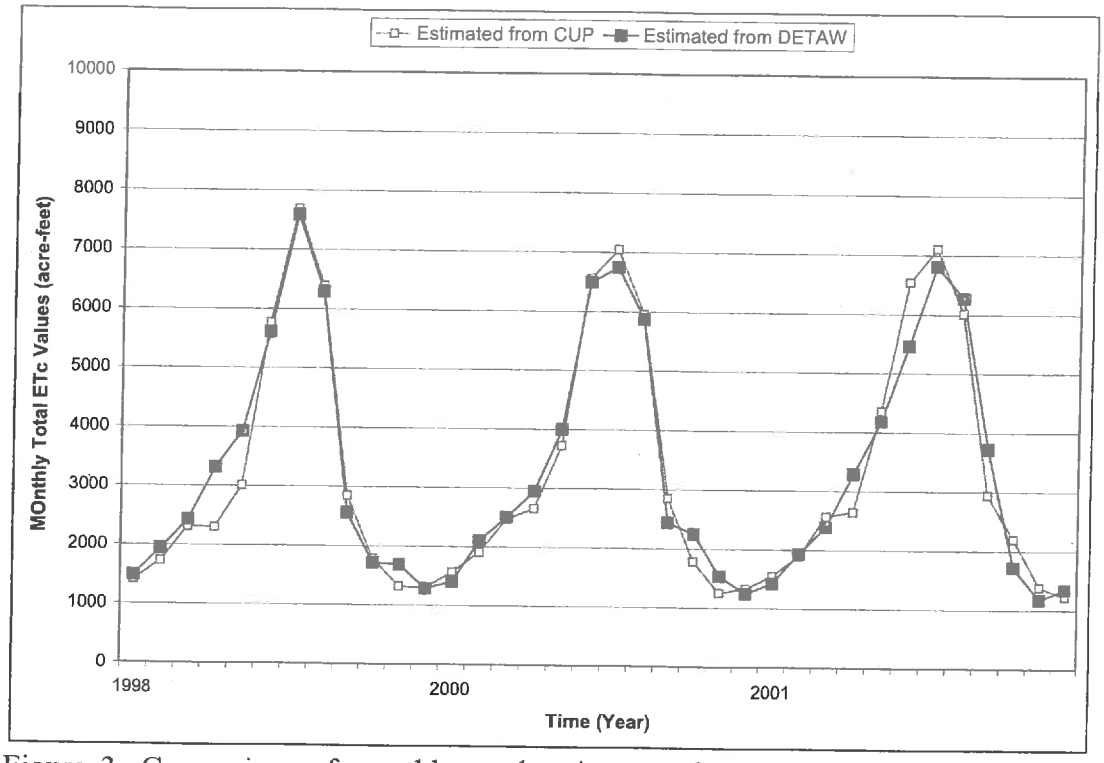

Figure 3- Comparison of monthly total estimates of evapotranspiration for agriculture from CUP and DETAW in sub-area 1 in the Delta during 1998 (wet), 2000 (average), and 2001 (dry) periods.

Results and Discussion:

The monthly cumulative values of agricultural and wetland ET_c estimated by DETAW were plotted against time (months) for 1998, 2000, and 2001 in Figures 4-6 for the Lowlands, in Figures 7-9 for the Uplands, and in Figures 10-12 for the entire Delta. For the entire Delta, the ET_c for the wetland cattails and tules was about 16% (1998), 20% (2000), and 22% (2001) higher than the agriculture-crop land-use group, which included irrigated pasture, alfalfa, all field crops, sugar beets, irrigated grain, rice, truck crops, tomato, orchard, vineyard, and non-irrigated grain (Figures 10-12). The results were similar for the Lowlands (Figures 4-6) and for the Uplands (Figures 7-9). When irrigated winter cereal and grapevine cropped areas are not converted to wetland vegetation in the Delta, the cattails and tules could increase evapotranspiration (ET_c) by about 13% in 1988 and 16% in 2000 and 2001, respectively.

CENTRAL DELTA WATER AGENCY

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July 29, 2014

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Re: Draft Bay Delta Conservation Plan and
Draft Bay Delta Conservation Plan EIR/EIS
DJN Sr. Part Five

This is Part Five of my submittal. It includes submittal on behalf of both Central Delta Water Agency and South Delta Water Agency of Additional Analysis and Comments Set Three, 72 pages.

Yours very truly,

DANTE JOHN NOMELLINI, SR.

BDCP HCP/NCCP and EIR/S Public Draft Comments		7/28/2014	
Document Section	**Issue**	**Comment**	
Chapter 3 - Alternatives			
Introduction	The reader still directed to a website to get more specific information on the proposed project and conservation actions.	The DEIR/S link did not even point to these items specifically. Websites change, are not a suitable substitute for providing the reader information and some people do not have internet access. All relevant supporting descriptions should be included in the document, not deferred to a website.	
Alternatives identified	Reclamation's announcement in the Federal Register that their role in the project may only be to wheel water through the BDCP facility fundamentally changes the purpose and need or the project and changes the conveyance capacity, potential operations and habitat restoration requirements.	The project should go back to scoping with the CVP's level of participation defined as only for water wheeling through the facility.	
	There were project components included in the Proposed Project that are outside of the planning or project areas that were used as rationale to exclude potential project components from further consideration in the alternatives screening process.	The BDCP Proposed Project includes actions which occur outside of the planning area that was used as a screening criteria. These Proposed Project actions that are outside the planning area include transmission lines, Bear Creek habitat restoration, and others. Since the BDCP has violated the concept (fundamentally flawed and indefensible to start with) of confining potential project actions to an arbitrarily defined planning area, then any alternative or concept that was in whole or in part dismissed from further consideration on the basis of geographic location of the action during the alternatives scoping process should be reinstated and included in a revised project alternative. A good example of an alternative dismissed on this flawed and inconsistently applied screening criteria is the option for additional upstream or downstream storage as an alternative or a component to an alternative - see related comments on additional storage project alternatives.	
	The No Action definition did not include the existing Fish Screening Program in the delta.	Funding to continue and expand the Fish Screening Program was included by the BDCP as an other stressor action. This makes the proposed project comparison to the No Action condition incorrect and results in the BDCP taking too much credit for this other stressor action.	
	The current CVP/SWP operations ordered by Judge Wanger for limited reverse flows on Old and Middle Rivers resulted in reduced fish salvage at the CVP/SWP south delta pumps in 2012.	Since a simple reoperation to reduce reverse flows in Old and Middle River from CVP/SWP operations resulted in significantly reduced fish salvage which reduces the impact of the project and therefore reduces the need and justification for the BDCP project, reduced reverse flows with other complimentary modifications to the south delta facilities and operations should be an alternative included for evaluation in the EIR/S. This alternative should include reverse flow restricted operations with other physical modifications to the existing CVP/SWP south delta facilities such as, but not necessarily limited to: criteria fish screens; a controlled and reduced fish path through Clifton Court Forebay to reduce duration of exposure of fish to predators in the forebay - (see related comment detailed descriptions); fish behavioral modification devices to manage fish distribution away from the intakes (bubble curtains, acoustic and light deterrents); and improved fish salvage capture, storage and release facilities and operations. This alternative could also be as a first phase of other alternatives so that there is some tangible improvement in fisheries conditions while other longer lead time alterna	

	High water turbidity is well documented and accepted as an important predator protection for smelt.	There have been experiments with flows to see how they protect smelt, but no experiments with increased turbidity. Increased turbidity does not cost water supply. It also might allow us to finally dredge some parts of the delta that are in critical need of it to restore flow capacity for flood protection. A component for adaptively managing turbidity and monitoring fish survival should be included in the alternative evaluated.	
	The BDCP proposes to restore and conserve "grassland; vernal pool complex; alkali seasonal wetland complex; managed seasonal wetland; nontidal perennial emergent wetland and nontidal perennial aquatic; and cultivated lands."	There is no "purpose" identified in the EIR/S for the project to include these types of habitats in the restoration plans. The CVP/SWP projects do not affect these habitats with their operations and therefore there is no "need" to get a take permit for these species. Any affect on these habitat types would be from the conveyance construction or from conversion to aquatic habitat types should be avoided and minimized to the extent possible and mitigated for their impacts (which does not require an ITP). Unnecessary inclusion of these habitat types in the restoration plans only increases the impacts of the project. There should be at least some of the alternatives considered in the EIR/S that do not include these habitat types so that the impacts for including an aspect of the project in the scope that does not address an identified need or purpose can be quantified and isolated.	
	The 75940 Federal Register / Vol. 78, No. 240 / Friday, December 13, 2013 states that, "Reclamation may also make decisions regarding wheeling CVP water through new Delta conveyance facilities…" -	There is no mention of Reclamation wheeling water in the EIR/S in the project description, Purpose and Need or in the alternatives. This is a critical omission from the document. If Reclamation wheels water through the facilities, it will not have ownership of the facilities or need Incidental Take Permits. If Reclamation is only wheeling water through the facilities, what justifies Reclamation's role as a co-lead Federal Agency and more importantly for being a cost share partner in the environmental planning process (over $110 million to date and counting)?	
	The conveyance alignment was biased to take lands under a Williamson Act contract in order to acquire rights-of-way for the BDCP based primarily for the lower cost of acquiring land in an agricultural preserve.	BDCP needs to demonstrate there is no other outside the Williamson Act preserve on which it is reasonably feasible to locate the facilities.	
Alternatives dismissed	The alternatives formulation and screening criteria were not consistently applied.	Alternatives identified, but not considered or not given adequate consideration in the alternative development process include: Sacramento Deep Water Ship Channel as a conveyance; additional south of water storage; additional north of delta storage; enhancements to south delta pumping facilities and operations; a larger number of smaller intakes distributed throughout the central and east delta potentially incorporating an isolated Victoria Canal; and combinations of north and south of delta storage, modification of south delta pump facilities and operations and distributed intakes;	
	Most of the impacts of the CVP/SWP project can be resolved or significantly reduced by improvement of the intake facilities in the south delta to reduce fish salvage and by building additional north and south of delta storage so that water can be diverted at times of year that have the least amount of environmental conflict.	This combination of additional upstream and/or downstream storage with improved south delta intakes (see related comment detailed description of an isolated Clifton Court Forebay, fish criteria intake screens and improved fish salvage operations was never considered in the alternatives development process. All of these concepts as alternatives were introduced in the BDCP scoping process.	
	3.3 “As noted in Chapter 1, Introduction (Section 1.5), the Plan Area consists mainly of the statutory Delta, the Suisun Marsh, and the Yolo Bypass. The Areas of Additional Analysis are two areas outside the defined Plan Area that encompass power transmission corridors.”	If exceptions to the Plan Area have been made for conveyance, then other CM alternatives should not be excluded from further consideration using rationale that they fall outside the planning area.	

	Many aspects of the alternatives formulation were predecisional.	Most of the habitat restoration components included in the alternatives were identical. The BDCP did not include any variations in restoration design (e.g. sediment contributing or capturing), size, location, and implementation sequence and combinations which is very limiting to the analysis of alternatives and is therefore predecisional on the part of the project and the lead agencies. Not including permutations of the restoration design thwarts the purpose of the alternatives and environmental review process to identify the impacts of various project alternatives. The BDCP has similarly been predecisional by only including one type of intake design, one intake size and 5 intake locations. The BDCP did not evaluate a broad enough range of geographic distribution of intakes either and confined its intakes to one river reach. If most of the alternatives are exactly the same in many important aspects (restoration and intakes), then some of the most important aspects of the project are effectively not evaluated or compared. The BDCP needs to reformulate their alternatives to include permutations of alternatives that do explore real variations in these important project compo	
	The BDCP did not utilize sufficient supporting or consistent rationale for dismissing potential project component.	An EIR is required to include an in-depth discussion of those alternatives identified as at least potentially feasible. (Preservation Action Council v. City of San Jose (2006) 141 Cal.App.4th 1336,1350-1351; Citizens of Goleta Valley v. Bd. of Supervisors (1990) 52 Cal.3d 553, 569.)	
Level of analysis - project vs. programmatic	It is inappropriate to piece-meal the project and environmental documents by doing the conveyance at a project level of specificity and the habitat restoration at a programmatic level as the BDCP has proposed.	Most programmatic documents are for things like County General Plans which are a compilation of different projects and are blue-prints describing an envelope of potential action and scope. The BDCP project is very different from what a programmatic document should be. The BDCP habitat restorations are required in order to issue permits for the construction of the tunnel. The specific design characteristics of the aquatic habitat restorations have profound impacts on water quality and therefore operations. In addition to design specificity for the aquatic restorations, the interactions of the implementation sequence and characteristics of the change of hydraulic complexity (drainage characteristics) of intertidal habitat must be defined at a project level of specificity to determine water quality and operational affects. Therefore the habitat restorations are every bit as much a part of the core of the project as the proposed tunnels.	
	The level of certainty of funding is insufficient to justify the agencies issuing permits on the project.	The BDCP sources of funding for large parts of the project (bond issuance from each of the water agencies for the construction and operations of the conveyance, and funding from tax payers and public resource agencies for habitat restorations) are uncertain and unreliable. Their has been no tax proposed or funding source identified for the public resource agencies to pay for the habitat restorations. If any of the water agency or public resource agency funding sources fail, then the project will fail to meet its commitments and a level of species conservation that would warrant issuance of incidental take permits will not occur. Given the number of water agencies and public resource agencies involved in the funding and each one critically responsible, there will be at least 50 opportunities for funding to not be successful. Only if all of the funding efforts were successful would the BDCP fulfill its commitments. Given this simple math, it is far more likely that the BDCP will fail to raise all the funding to implement the project as planned than it is that they will be 100% successful. The BDCP has not even proposed contingency funding back-up plans such as the w	

	The BDCP EIR/S makes repeated statements in various sections regarding the potential reuse of tunnel spoils for habitat restoration, levee improvements and addressing subsidence on islands.	The BDCP has provided no chemical or physical characterization of the tunnel spoils or supporting core and geotechnical sample analysis of the strata that would be bored through or analysis of their suitability for these proposed purposes. Tunnel spoils may contain contaminants (see related comments) and may render them utterly unsuitable for any reuse and may be required to be disposed of as a class one material. Tunnel muck is treated with a handling material to make them flow for handling and turns the material into a toothpaste-like consistency. This likely renders the tunnel spoils unsuitable, permanently, for any structural application such as levee improvements. The tunnels were proposed by the BDCP to be analyzed at a project level of detail and yet the tunnel spoils handling and disposal are clearly analyzed at only the barest of sketches of a programmatic analysis. Tunnel spoils are an integral component and requirement of the proposed project construction and therefore must also be analyzed at a project-level of detail if the proposed project is to be issued construction-related permits. How and where the tunnel spoils are disposed of ma	
	comment continued	If the materials need to be moved to greater distances, to farther distant habitat restorations or levee improvements (as the BDCP has proposed, but not defined or disclosed), then there are greater air quality and traffic impacts. If tunnel spoils have to be disposed of as a class one material due to contaminants (which the BDCP has not analyzed), then there are a multitude of impacts which the BDCP EIR/S has not considered - see related comments. In order to develop a project-level analysis of the tunnel spoils and use the best available science in evaluating the impacts of the tunnel spoils, the BDCP EIR/S needs to be revised to include disclosure of the physical and chemical characteristics of the tunnel spoils. The sampling and characterization of the soil conditions that the tunnels will bore through must be of sufficient density and representativeness along the length of the proposed tunnel alignment that a statistically reliable interpolation of sample results can be conducted, e.g. NI 43-101 compliant. Only with this level of data collection and analysis can the BDCP evaluate impacts at a project-level. Once this level of analysis has been completed, then the BDCP EIR/S ca	
	The BDCP EIR/S does not disclose the current deficiencies in the safety regulation compliance of the Clifton Court Forebay. (see related comments)	The Clifton Court Forebay is not currently compliant with Division of Safety of Dams (DSOD) structural requirements. The BDCP proposed project includes modifications to the forebay (BDCP EIR/S Figure M3-4 page 11 of 15). BDCP proposed modifications of the forebay triggers a DSOD compliance requirement event. The BDCP does not disclose what components and costs of the proposed modifications of the forebay are to bring the deficient facility into current compliance. The BDCP EIR/S must be revised to include these material disclosures.	
Scoping Report part 1			

Appendix 1D, section 2.2.3	This section uses "Project Area" and "Planning Area" interchangeably.	The title of section 2.2.3 is "Project Area" and the first sentence of the section refers to the "Planning Area". This representation is inconsistent with how these terms are defined and used in different document sections. The EIR/S provides no justification for the geographic limitation of the planning area in which it considers where potential actions could be taken as part of the alternatives development process - see related comments. This section says, "The EIR/EIS project area may be different than the proposed BDCP geographic scope to appropriately evaluate impacts of the proposed BDCP and alternatives." This is correct, but then the scoping document goes on to exclude potential project alternatives and alternative components from further consideration for the fact that they would occur outside of this artificially constrained and unsupported geographically constrained potential area of action. The EIR/S is clearly inconsistent with itself on this topic and the alternatives considered should not be constrained if they meet other appropriate screening criteria. Any alternatives that were eliminated from further consideration due to geographic location should be	
2.2.5	The section identifies a range of fisheries species conservation measures, but fails to include modification of the existing south delta diversion facilities screens to improve fish protection.	Adaptation of the screens to improve fish protection has been studied several times prior to the BDCP scoping, e.g. CALFED, and therefore these concepts were readily available for consideration and inclusion in the BDCP EIR/S scoping development process. Although many concepts to improve the screens to improve existing CVP/SWP fish protections (see related comments) and mandate for improved protections of fish from the screens (see FWS and NMFS OCAP Biological Opinion Reasonable and Prudent Actions), the BDCP failed to include consideration of this obvious project alternative. The improvement of the existing screens as a component of the BDCP EIR/S alternative should be included in a revised draft EIR/S.	
2.2.5	"Three general conveyance concepts identified in the 2009 NOP and NOI include: (1) a dual conveyance alternative; (2) an isolated facility alternative; and (3) a through Delta alternative."	Where in the scoping process and administrative record was the concept of the tunnels introduced? Please provide documentation that the tunnel conveyance concept was identified and documented during the public scoping period. If it was not identified during the public scoping period, then the project has violated the scoping process and scoping should be reopened to allow other additional options to be introduced and considered.	
2.2.5	"New points of diversion in the North Delta could (emphasis added) be located along the Sacramento River between Sacramento and Walnut Grove."	The BDCP never provided justification for the artificial constraint of the potential locations of the diversions. This geographic constraint is predecisional and arbitrary. The wording of this EIR/S statement and the language used in the NOI and NPO is clearly predecisional. Some other proposals put forward during scoping included diversions at other locations, .e.g. at Fremont and Sacramento Weirs for the Sacramento Deep Water Ship Channel as a potential conveyance component - see related comments; distributed intakes in the west, central and east delta - see related comments. The Fremont and Sacramento weir diversion locations have the benefits of being outside of the tidal prism that affect downstream location diversion operations, would avoid exposure of the American River salmonids to the screens and is upstream of the range of the delta and longfin smelt so they would also avoid exposure and harm from the screens. The distributed intakes concepts are deep in the tidal prism, but have the operational advantage of being distributed so that when species of concern are located in one part of the delta those intakes could be shut down a	

Table 3-1	The table identifies categories of comments received during the scoping process.	Of all the comments received, the BDCP EIR/S claims that there was not even one comment received that was relevant to the conveyance location, conveyance types, conveyance capacity, diversion locations, intake types, or any other conveyance engineering or design attributes or options. The BDCP did not identify all the comments received related to the conveyance as a category because the BDCP had already decided what they wanted to build and where it was going to be located (see preceding comment on predecisional bias in the scoping process). As an example, the concept of the use of the Sacramento Deep Water Ship Chanel as a conveyance option as proposed by John Garamendi and Peer Swan as introduced during scoping. What unrepresentative category was that comment filed under? As an example, on page 637 of the Scoping Report, CCWD makes a comment relative to the conveyance capacity. As another example, on page 680 of the Scoping Report, a letter from Downey, Semor and Brand dated May 30, 2008 has a while section of the letter dedicated to conveyance alternatives and design characteristics. Where are these comment represented and how were these concepts addressed in the alternatives development and screening process? The categories used on	
3.2.1	The EIR/S has a section titled "3.2.1 Scoping Process and Future Participation in the EIR/EIS Process Concepts", but the entire scoping report never discloses the alternatives development and screening process that was used.	Instead of explaining the process used for scoping as the section title promises, the content of the section only lists they numbers and sources of comments received. The EIR/S and Scoping Report does not disclose the process in which alternative concepts identified in the scoping process were developed into alternatives. On what basis and process were concepts treated and how were they determined to be combined into an alternative or not? What were the screening criteria and where is the documentation of how each concept was treated? There should be documentation of each of the concepts identified in scoping. These individual concepts as they should have been captured were not presented in the scoping report. The screening and evaluations criteria should be clearly tied back to and supported by the Purpose and Need and Project Objectives identified in the NOI/NOP and in Chapter 2 of the EIR/S. The BDCP EIR/S document does not disclose the evaluation criteria or provide supporting rationale for how they relate to the project objectives and needs. If the appropriate NEPA and CEQA alternatives development and screening process had been followed, a much r	

3.3	BDCP HCP/NCCP plan	The BDCP made substantial changes to the proposed project after the public scoping period for the EIR/S was completed. Substantive changes included changing from a eastern or western surface conveyance to two underground tunnels, substantial operational rules changes, changes in locations of and which habitat restorations were being proposed (southeast delta habitat restorations were dropped). This means that the project that the public was allowed to propose alternatives to was substantially altered after their opportunity for input into the process. To make this violation of NEPA and CEQA scoping requirements worse, the BDCP EIR/S entertained and evaluated alternatives from selected parties long after the public scoping period was closed - see documentation in appendix 3A, e.g. Pyke alternative, Garamendi alternative, etc. This favoritism and bias in the process for certain favored parties is in direct conflict with NEPA and CEQA requirements and acceptance of information from private parties outside of the public review process that influences policy or decision making information violates federal advisory contracting rules (FACA) in this case. The BDCP	
3-27, line 18	The tunnel description has changed.	The BDCP alt4 tunnel diameter, length and pumping vs. gravity feed project description has changed substantially since this public draft. These are material changes that alter tunnel muck disposal volumes and disposal area size, air quality from construction, volumes of cement, traffic loads and energy resource-related impacts. All impact analyses that relied upon the out-of-date project description of the tunnel are in error and must be redone. The EIR/S must be revised to correct these errors and recirculated for public comment.	
3-28, line 27	The forebay descriptions have changed.	The BDCP tunnel forebay and Clifton Court Forebay modification/expansion location and size description has changed substantially since this public draft. These are material changes that alter grubbing impacts, construction footprint of disturbance, disposal volumes and disposal area size, air quality from construction, and energy resource-related impacts. All impact analyses that relied upon the out-of-date project description of the forebay are in error and must be redone. The EIR/S must be revised to correct these errors and recirculated for public comment.	
3-31, line 40	"How much of the Delta inflow can be exported at the south Delta CVP and SWP pumping plants?"	This is identified as a primary objective of the proposed CVP/SWP operations and yet, the impact analysis call related to exactly this criteria was "No Determination". Since the BDCP failed to be able to make a determination, then the BDCP proposed project has failed to meet this primary objective and answer this primary question.	

3-34, line 6	"Fish protection at the proposed BDCP north Delta intakes would also be provided by operational parameters that are screen approach velocity and sweeping velocity requirements. General daily or monthly rules for maximum allowable north Delta diversions were incorporated into the CALSIM modeling of each BDCP alternative."	The BDCP is saying that fish protections would be provided by operating the screens in a manner that provides for screen criteria compliant approach and sweeping velocities. These are screen criteria are instantaneous and continuous measurements, not based on daily, weekly or monthly averages. Then the BDCP says it uses "daily or monthly rules" for north delta diversions. The BDCP makes it sound like the screen criteria compliance operations are integrated into the monthly CALSIM modeling, but they are not. The BDCP is saying that they will operate to screen criteria, but those operations of ramping diversions up and down with changes in tidal flow velocities at the screen face to stay compliant with approach and sweeping velocity criteria have not been modeled and there is no diversion operations model that has any feedback loop into the CALSIM model. The assurance by the BDCP that the project will operate to screen criteria is only that, an unsupported commitment with absolutely no analysis or proof. The BDCP does not even know if they can operate in a screen criteria compliant mode and meet the CALSIM water operations that they have proposed and ana	7

	Comment continued…	If the maximum compliant diversion volumes aggregated on the monthly basis were higher than the CALSIM target for the north delta diversions, then the operations can be proven to be compliant with the fish screen criteria and that the CALSIM model results used in the EIR/S analysis were correct. The BDCP failed to provide this proof that the north delta diversions can be operated in a fish screen compliant manner or that the CALSIM modeling results that determine north delta diversion monthly volumes are correct and suitable for use in the EIR/S analysis. If the monthly aggregated maximum compliant diversion volumes are less than the CALSIM model results used in the EIR/S analysis, then either the north delta diversions would have to be operated in a manner that was not fish screen compliant or the water operations that the BDCP did the EIR/S analysis on a model result that they cannot operate to. Unless the BDCP can prove that the north delta intakes can be operated in a screen compliant manner and that actually results in the same operations as the BDCP EIR/S used in their analysis, the entire water operations and water operations dependent impact assessments a	
3-35, line 18	The BDCP is missing a Scenario	If the BDCP had not incorrectly dismissed, north of delta, in-delta and south of delta storage, there could have been a "sip vs. gulp" set of operations that would attempt to divert more water in the winter high flows when there is less environmental conflicts and less diversions during the summer when environmental conflicts are the highest. Since the BDCP wrongly dismissed the storage alternatives with their predecisional and unsupported geographic constraint and the storage alternatives require full analysis in the EIR/S as they reasonably meet the defensible portions of the identified purpose and need, the BDCP must also include the sip vs. gulp operations scenario for the revised EIR/S analysis.	
3-40, line 25	"Reclamation's action in relation to the BDCP would be to adjust CVP operations specific to the Delta to accommodate new conveyance facility operations and/or flow requirements under the BDCP…"	This statement is a representation of Reclamation's role in the project that is inconsistent with Reclamations Notice of Availability post in the Federal Register dated December 13, 2013. Reclamation indicated that it may or may not have a role in the project and may or may not wheel water through the facility. This is very different from this BDCP representation and Reclamation's role either as a joint owner operator of the facility or wheeling or not wheeling water through the facilities and has significant implications on the environmental impacts of the project. As an example, if Reclamation is neither a joint operator or a wheeler of water through the BDCP facilities, then the amount of water diverted at peak operations would be reduced by over 6,000 CFS. Any change in Reclamations role from full partner in the facilities would mean that all of the operations modeling and the dependent impact analyses done in the BDCP EIR/S would be wrong and need to be redone. Reclamation has to specifically define its role and participation in the project and the BDCP project must be revised to reflect that role and the impact analysis redone to evaluate the im	

3-40, line 34	"Additionally, as noted above, each action alternative would include operational criteria for the water supply infrastructure, habitat conservation components, and measures to mitigate the impact of other stressors on covered species."	This is a core problem with the "alternatives" evaluated by the BDCP in the EIR/S. The alternatives were all composed of minor variations of water conveyance facilities. As an example, all of the north delta diversion alternatives all selected from a set of 5 potential intake sites with a single type of intake design considered. There were no alternatives with intake locations that occurred either farther upstream or downstream from these 5 sites or that considered in-river type intake designs. There were some variances in operations alternatives, but they only included or excluded X2 in any meaningful difference. All of the rest of the components that make up the alternatives were almost identical in every way. In one case there was a little more or less habitat restoration. All of the Other Stressors actions were exactly the same for all of the alternatives. These alternatives could potentially be considered a reasonable range for the conveyance concepts (they were not - see related comments), but they certainly could never be represented as a reasonable range of alternatives for all of the other components that make up the alternatives (i.e. water operations, habitat resto	
3-41, line 24	"The alternatives differ primarily in their physical conveyance facility infrastructure/improvements, the locations of facilities, and diversion capacities."	Yes, that is exactly the problem with the lack of range of reasonable alternative - see the preceding comment.	
3-41, line 31	"...the No Action Alternative may be described as the future circumstances without the proposed action and can also include predictable actions by persons or entities…"	Here is another problem with the alternatives definitions. The No Action assumes that the agencies would not alter their operations or water delivery contracts in the face of climate change. The state and federal agencies that are the same lead, responsible and cooperating agencies for the EIR/S are all studying climate change in anticipation for the need to take action and adapt their operations to it. There are already policies in place for how climate change will be addressed by these agencies. The BDCP incorrectly assumes that under the No Action, there will be no operating response to the climate change the agencies are already preparing and planning for. It is not reasonable for the BDCP to assume that the future no action operations would just sit on their collective hands and do absolutely nothing in response to the climate change impacts. The advantage the BDCP is giving the proposed project over the No Action is that they assume operational responses to climate change that can also be done under the No Action. This assumption by the BDCP is designed to make the proposed project look better as compared to the No Action. MBK's comments on the BDCP EUR/	

3-41, line 35	"When the proposed action involves updating an adopted management plan or program, the No Action Alternative includes the continuation of the existing management plan or program. The CEQ suggests that the No Action Alternative may provide a benchmark that allows decision makers to compare the magnitude of environmental effects of the action alternatives (46 Fed. Reg. 39 18026 [March 23, 1981])."	Climate change is a current program for DWR. It has the Climate Change Action Team, so adapting operations under a changed climate is within existing plans and policies. The current BDCP modeling shows the CVP/SWP reservoirs being drawn below their respective river valve outlets 1 year out of 12 - see related comments. There is no way in the real world that operations would be allowed to result in such a consistent catastrophic outcome. There are already agreements in place for each of the reservoirs that allow for fisheries and water agency consensus decisions to avoid reaching a point where no water can be released from the dam because water levels were allowed to go below the river outlets. The BDCP has assumed that there would not be any actions from these existing agreements to avoid these impacts. The reason the BDCP No Action assumption error is important is that the lack of reaction to climate change completely overshadows the impacts of the proposed project and other alternatives. The BDCP EIR/S makes this statement repeatedly that the amount of change from the project is so small as compared to the climate change impact as	
3-41, line 35	"Accordingly, this EIR/EIS uses the No Action Alternative as the point of comparison for determining impacts of the federal action under NEPA."	This is correct, but that is not how the impact analysis was conducted in this EIR/S. The No Action has impacts and the impacts of the proposed project are treated as being the same quantity. If the NEPA No Action comparison were being done correctly, the EIR/S would have disclosed that the impacts of the proposed project and alternatives are in addition to those that occur under the No Action. As an example, if the No Action impact on a species was determined to be "Significant" because it adversely modified 100 acres of critical habitat and the Proposed Project had exactly that same 100 acre adverse affect, the correct impact call would be "No Effect". When the BDCP makes an impact call and presents the results they do not make it clear that the impacts reported on the Proposed Project are in addition to the impacts of the No Action. Back to the example - If the proposed project or alternatives also has a "Significant" impact, that impact is in addition to the impact of the No Action. although the quote is correct, that is not how the impact calls are presented and interpreted in the EIR/S. This misrepresentation of the comparisons to the baseline must be corrected	
3-42, line 1	"The CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting, or existing conditions, at the time a Notice of Preparation (NOP) is issued (State CEQA Guidelines Section 15125[a])."	This is correct, but this is not how the BDCP defined their baselines for comparison for the impact analysis in the EIR/S. All of the project alternatives comparisons were against the No Action, which the BDCP incorrectly claims is the exact same condition as the No Project. The No Action, No Project and Existing Conditions are all different. The existing condition has not implemented the OCAP BO RPAs that were mandated, but are obligations of the CVP/SWP to implement so they meet the test of reasonably foreseeable and the execution of currently accepted commitments and management plans of the CVP/SWP. Since the Existing Condition and the No Project are both different than the No Action and the BDCP has only made comparisons to the No Action, then the BDCP must redo the impact analyses with the correct comparisons required by CEQA.	

3-43, line 14	"For this analysis, the No Action Alternative assumptions are limited to Existing Conditions, programs adopted during the early stages of development of the EIR/EIS, facilities that are permitted or under construction during the early stages of development of the EIR/EIS, projects that are permitted or are assumed to be constructed by 2060, and changes due to climate change and sea level rise that would occur with or without the proposed action or alternatives..."	A glaring omission from this list is the inclusion of the current CVP/SWP legal obligations to implement the OACP BO RPAs. The BDCP is consistently unclear as to the inclusion of these current CVP/SWP legal obligations under the No Action and No Project. The way the BDCP represents it, the OCAP BO RPA obligations are conflated with the proposed habitat restoration actions. In some cases, what the BDCP has proposed is exactly what they are already obligated to do (so no credit towards contributions to conservation should be given, but they appear to be - see related comments). In other habitat restoration actions, the BDCP has proposed to do some incremental action on top of or in addition to the current CVP/SWP OCAP BO RPA obligation. This conflation of the current unimplemented OCAP BO RPA obligations that belong in the No Action and No Project with the proposed project actions makes these project alternative comparisons corrupt and useless as an environmental disclosure document. The BDCP must clearly separate current obligations yet to be implemented into the correct baselines for comparison from the proposed project actions in the EIR/S ana	
3-43, line 20	"These assumptions represent continuation of the existing plans, policies, and operations and conditions that represent continuation of trends in nature."	Emphasis added on the quote was to highlight that operational adaptation of the CVP/SWP to climate change should definitely have been included in the No Action and No Project definitions - see related comments.	
3-43, line 23	"Because the BDCP No Action Alternative assumptions are consistent with the requirements and limitations prescribed by CEQA, from this point forward in this document, the No Action Alternative also represents the No Project Alternative."	This BDCP declaration that the No Action and No Project are the same is unsupported. The BDCP describes, vaguely, what the requirements are of each, but fails to establish that the elements that make up the No Action are the same as what would make up the No Project. For each element that is included in the No Action, the BDCP needs to disclose and demonstrate that the No Project elements are exactly the same. The BDCP has not made this disclosure so it is impossible for the reader to do this analysis for themselves or challenge the BDCP on the details of the definitions.	
3-43, line 33	"The anticipated effects of actions required by the 2008 and 2009 BiOps that have already occurred or are expected to be implemented prior to BDCP approval are assumed in the No Action Alternative."	the current OCAP BO RPAs. The BDCP does not get to just arbitrary ignore these legal commitments if they don't happen to have been implemented prior to the completion of the BDCP. Many of the RPAs have scheduled implementation or planning/development milestones, so if DWR and Reclamation had been compliant with the OCAP BO RPA implementation mandated schedule, the actions would have been developed enough to model and estimate impacts on. Another problem with this BDCP EIR/S quote is that it presumes approval of the BDCP and that is predecisional. Another problem with this predecisional assumption is the BDCP does not know for certain if or when the BDCP would be approved. The BDCP is already 5 years behind their original schedule to complete the environmental review process and receive and NOD and a ROD on the EIR/S, so the EIR/S is almost certainly wrong about what date it though the cutoff would be for this erroneous line of logic.	

3-43, line 36	"The anticipated effects of actions required by the 2008 and 2009 BiOps that change water operations in the Plan Area or upstream were assumed in the No Action Alternative <u>if they were reasonably certain to occur</u> and enough was known about the effects of the action in early 2010 (when the No Action Alternative for hydrodynamic modeling was established) to define modeling assumptions for the change in water operations."	Emphasis added - all of the OCAP BO RPAs are reasonably certain to occur because they are the current legal requirement and obligation of the CVP/SWP. The OCAP BO RPAs will remain reasonably certain until they are legally overturned or legally superseded and not a day before. BDCP has based their speculation that some RPAs may not be included in the No Action based on another process, the Remand EIS (that is farther behind in process than the BDCP) and that it might or might not supersede some of the current OCAP BO RPA legal requirements. As stated before, the BDCP must include all of the OCAP BO RPAs in the No Action as they are the current legal requirement of the CVP/SWP. The BDCP EIR/S quote then claims that some actions were not included in the No Action because they lacked sufficient detail to model. Many of the RPAs have scheduled implementation or planning/development milestones, so if DWR and Reclamation had been compliant with the OCAP BO RPA implementation mandated schedule, the actions would have been developed enough to model and estimate impacts on. DWR and Reclamation could have also engaged their federal co-leads on the BDCP, NMFS and USFW, that issued the OCAP BOs in consultation to develop the detail sufficiently such that the RPAs	
3-43, line 41	"The anticipated effects of some actions required by the 2008 and 2009 BiOps in the Plan Area are also included in the BDCP conservation strategy. In some cases, these actions are included in the No Action Alternative and in other cases they are not. A key reason for these assumptions is that the 2008 and 2009 USFWS and NMFS BiOps will be superseded by the BDCP and associated BiOps."	The BDCP is saying that they have included or excluded elements of the OCAP BO RPAs and included or excluded them from the No Action and Proposed Project at will and without regard that these are all No Action elements that cannot be included in the Proposed Project. By including these actions in the Proposed Project, the BDCP is taking credit for contributions toward conservation that are existing legal obligations of the project under the No Action. This makes the No Action look worse and the Proposed Project look better in the EIR/S than they actually are. The key reason given for their assumption is based on a predecisional that the BDCP will be approved by the lead, cooperating and responsible agencies; that there will be a Biological Opinion based on the approved BDCP; and that the fisheries agencies will write the BO in such a way as the BDCP would replace the current BOs in their entirety. These are unsupported and wildly biased and predecisional assumptions that must be retracted and revised. Because USFWS and NMFS are federal leads on the BDCP and approved this public draft for release, these agencies must have agreed with these predecisional eleme	
3-44, line 3	"As described in Chapter 1, Introduction, the current operation of the CVP/SWP is governed by requirements that include the 2008 and 2009 BiOps. The requirements of these BiOps may be modified in response to a court ordered remand process, depending on the schedule approved by the court. The new operation of BDCP will occur once the new north Delta intakes are constructed. Once the new intakes are operational, the BDCP and any corresponding BiOps will replace the then-current BiOps for long-term operation of the CVP/SWP."	Yes, the current CVP/SWP operation is dictated by the current OCAP BO RPAs. The fact that the BO s may be modified in the Remand process does not make that modification reasonably certain and it does not provide sufficient justification for the BDCP to ignore the current operating requirements in the hopes that some other process may or may not change them in the future. The rest of this BDCP EIR/S quote represents pure predecisional bias. There are other alternatives that do not have north delta intakes, so clearly the BDCP is anticipating that the alternative they proposed will be the one selected and implemented. It is not a foregone conclusion that the BDCP, if approved, would replace the current OACP BO s, so this statement by the BDCP is also predecisional. Only USFWS and NMFS have the authority to determine, at a future date after the BDCP is approved, if the BDCP would be the basis for a new BO and that BO would supersede the current in full force and affect BOs in part or in their entirety.	

3-44, line 9	"Examples of effects assumed in the No Action Alternative, but that are also associated with BDCP conservation measures, include the effects of operations of the Delta Cross-Channel Gates (NMFS Action IV.12) and those related to measures to reduce entrainment at the south Delta export facilities (NMFS Action IV.3). An example of the effects of actions that are attributable to the BDCP and not assumed in the No Action Alternative include Yolo Bypass improvements and tidal marsh restoration (NMFS Actions I.6.1, I.6.2, and I.7; USFWS Action Reasonable and Prudent Alternative Component 4)."	Yes, these are all great examples of OCAP BO RPAs that are current legal requirements of the CVP/SWP under the No Action that were incorrectly included in and any conservation credit accrued to the Proposed Project. These actions must be deleted from the Proposed Project and alternatives descriptions and analysis and added to the No Action alternative description and analysis.	
3-44, line 16	"In some cases, RPA actions also included in BDCP were modified to take into account new scientific information available since the BiOps were issued, or additional planning done for BDCP beyond what was developed for the BiOps. Examples of this include CM16 Non-physical Fish Barriers, which is similar to, but much more defined and specific than, NMFS Action IV.1.3."	Great, this is what alternatives are supposed to be all about. The problem is that the BDCP did not include the legally required OCAP BO RPA in the No Action as it was defined in the BO. If it had done that and then proposed an alternative plan detail for implementation then the affects of the Proposed Project could have been evaluated and disclosed. As the BDCP has done it, this action is omitted from the baseline and modified in the Proposed Project so the difference that is measured in the comparison is doing the modified proposal against doing nothing (not correct) vs. doing the baselines and analysis correctly which would have disclosed the incremental impact or benefit of doing the Proposed Project action against the current legally required action as it was defined in the BO. This action (and the others the quote implies, but does not disclose) must be included in the No Action as written in the BO and included as the BDCP has proposed in the Proposed Project so these impacts can be evaluated and disclosed. This OCAP BO RPA is a good example and precedent of the due diligence that should have been applied to all of the OCAP BO RPAs that needed further dev	

3-44, line 20	"Requirements of the 2008 and 2009 BiOps that call for conducting planning or feasibility studies with undefined outcomes were not assumed in the No Action Alternative. By themselves, these planning or feasibility studies would have no effect on environmental conditions. Their outcomes are unknown at this time and therefore too speculative to include in the No Action Alternative. Further environmental compliance, permitting, and ESA and California Endangered Species Act (CESA) compliance would be needed to implement any recommendations of these future studies. Examples include fish passage over SWP/CVP terminal dams such as Shasta (NMFS Actions NF4.4 and LF2).	The deadlines for completing many these planning and feasibility studies have already been missed by DWR and Reclamation - see related comments. It is true that plans and studies, in and of themselves have no environmental affect, but the studies and plans that should have legally already been completed would have provided the detail for the OCAP BO RPA requirements so that the environmental impacts of them could be evaluated in the No Action alternative and such that the BDCP EIR/S could have proposed alternatives to those actions. As the BDCP has done this EIR/S analysis, these actions are excluded from the No Action impact analysis, no alternatives to these RPAs are proposed and the CVP/SWP impacts of legally required and therefore reasonably foreseeable actions have not been included in any of the impact analyses of the BDCP EIR/S.	
3-44, line 28	"Requirements of the 2008 and 2009 BiOps that involve reporting, monitoring, or research actions are not assumed in the No Action Alternative because they are not expected to affect the environment or covered species	This is an inappropriate way to treat the No Action baseline definition. All of the OCAP BO RPAs, which are current legal requirements of the CVP/SWP, must be included in the No Action alternative description and analysis. Once No Action elements have been analyzed and disclosed in the EIR/S, then it can be determined that reporting, monitoring and research actions don't have impacts. We agree that reporting does not have impacts, but strongly disagree with the BDCP's supposition that monitoring and research cannot. As an example, seine trawling to sample for smelt presence and distribution results in take and mortality of the fish. It is possible, and a real risk, that these fish could literally be monitored into extinction by seine trawling. It is highly inappropriate for the BDCP EIR/S to have dismissed monitoring- and research-related OCAP BO RPAs from analysis of possible impacts in both the No Action and Proposed Project and alternatives. These actions must be included in the analysis and let the analysis prove or disprove the impacts (or lack thereof) and disclose it in the EIR/S rather than making this unsupported and incorrect assumption of no impacts.	
3-44, line 37	"At the time the 2009 BiOp was issued, the RPA actions (NMFS Actions I.6.1, I.6.2, and I.7) did not contain detail sufficient to include them in the hydrodynamic modeling or to determine the future effects of the actions. Action I.6.1 required Reclamation and DWR to submit to NMFS by December 31, 2011, a “plan to implement this action.”"	Yes, the OCAP BO RPA lacked sufficient detail to hydrodynamically model, but the implementation plan, that the BDCP statement implies it completed on time almost 2 years before the public draft EIR/S release should have. Even if the operations required parts of the description were incomplete because DWR and Reclamation failed to meet their legal obligations to provide these implementation plans by that date (see related comments), there was still sufficient information in the OCAP BO RPAs to analyze them at a programmatic level of detail in the No Action. The BDCP EIR/S did not do this and instead analyzed these current legal obligations of the CVP/SWP at a programmatic level only in the Propose Project. This error biases the entire analysis in the EIR/S. DWR and Reclamation must fulfill the OCAP BO RPA requirement for the implementation plan and that plan must be sufficiently detailed to model hydrodynamically, and must include this BO RPA in the No Action (not the Proposed Project) for the revised EIR/S analysis.	
3-45, line 1	"As described above, portions of the 2008 and 2009 USFWS and NMFS BiOps would be superseded by the BDCP and its associated BiOp for operation of CVP/SWP in the Delta.."	This is very specific and positive about an undetermined outcome from the project that is not within the authority of the project to decide. This, of the many, many examples, is perhaps one of the more egregiously predecisional by the BDCP EIR/S. This is a point blank, in your face predetermination of how things are going to go even though the EIR/S has not been approved and the new BO not drafted or approved.	

3-45, line 6	"Early in the BDCP planning process, it was assumed that the BDCP may become the vehicle to implement actions in the Yolo Bypass. However, Reclamation and DWR continue to develop environmental documents consistent with the RPA in coordination with the BDCP process.	This was a bad assumption as the BDCP timeline for implementation was completely incompatible with the implementation schedule legal requirements from the OCAP BO RPAs. Who was this assumed by? That is not disclosed. The legal compliance process with the OCAP BO RPAs does not need to coordinate with the BDCP. It is efficient for the legal compliance process to keep the BDCP informed, and the BDCP to consult with the fisheries agencies on their potential development of alternatives to the OACP BO RPAs, but there is not need for the OCAP compliance process to "coordinate" with the BDCP as the BDCP is slowing the process down to the point where DWR and Reclamation are in violation of the law with their implementation schedule of the OCAP BO RPAs.	
3-45, line 9	"The BDCP proposes actions in the Yolo Bypass that go beyond those in the NMFS 2009 BiOp actions."	Enhancements to the No Action is what is supposed to be called a Proposed Project or alternative. The BDCP must propose the modifications it wants to make to the OCAP BO RPA in their Proposed Project and alternatives and include the OCAP BO RPA in the No Action. Just because the BDCP has added mandated detail development to the OCAP BO RPAs that was required of DWR and Reclamation, it does not mean that the BO RPA action is exclusively in the domain of the Proposed Project and not of the No Action. If the BDCP has enhanced the action as compared to the No Action legal requirement, great, include that component of the enhancement as part of the Proposed Project. Any other approach, such as the BDCP EIR/S is currently using, is a sham and a purposeful misconstruing of the baseline for the purpose of making the Proposed Project impact analysis more favorable as compared to the No Action. The developed detail of the Yolo Bypass BO RPA must be included in the No Action definition and any enhancements to that action can be described and included in the Proposed Project or alternatives.	
3-45, line 10	"CM2 Yolo Bypass Fisheries Enhancement includes 20 component projects that are to be implemented in four phases (years 1 to 5, 6 to 10, 11 to 25, and 26 to 50)."	That is a lot of implementation schedule and plan to gloss over with no detail and no reference to any other part of the document that may actually have or not have that information. It appears there is an intricate implementation schedule that is not being publicly disclosed.	
3-45, line 22	"This additional detail was not known at the time of the NMFS 2009 BiOp and therefore could not be modeled in the No Action Alternative."	No matter how many times you say it, it is still not true. The EIR/S managed to incorporate a higher level of detail in the Proposed Project for this action, so it could have and should have used that information that was available for the No Action project description and impacts analysis.	
3-45, line 23	"Similarly, the 2008 USFWS Action RPA Component 4 related to the restoration of 8,000 acres of tidal habitat was not included in baseline modeling assumptions. Although tidal habitat restoration may occur prior to the implementation of the BDCP, generally, this restoration will be part of CM4 and is analyzed at a program level in this EIR/EIS.	It is becoming very clear just how corrupted the interpretation of the No Action has been. This is an RPA that is part of the No Action and the BDCP gives no rationale or justification for not including it in the No Action and including it as part of the Proposed Project. The summary table describing what was included in the No Action as opposed to the Proposed Project and alternatives is very inconsistent with this information and was very misleading - see related comments. Since the baseline has been so corrupted, and the baseline is used for comparison against for the Proposed Project and alternatives, the entire BDCP EIR/S analysis is corrupted and must be redone with a correct baseline for comparison.	
3-45, line 32	"The inherent challenge in envisioning No Action conditions nearly half a century away (2060) has required the Lead Agencies to make some informed judgments about what might happen outside the immediate SWP/CVP context during such an extended time period."	The challenge of the No Action over a 50 year period of time is small in comparison to the understanding of the implications of the Proposed Project and alternatives. The No Action is merely a continuation of current policy and plans with some changes in condition such as Climate Change. The much greater uncertainty, not identified or disclosed by the EIR/S, is the ability to predict the outcome of so many new actions of the Proposed Project above and beyond the continuation of existing plans and policies over a 50 year period of time. There is over 150,000 acres of aquatic habitat restoration to be implemented in over a dozen locations with no specific designs or management plans. Aquatic habitat restorations are well documented for being unpredictable in terms of how they develop over time and what habitat values are actually created. There is additional compounding uncertainties over exotic invasive species interactions with the habitat restorations. What the BDCP EIR/S is not telling the reader here is that the uncertainties of the No Action are much smaller than the certainties of the Proposed Project.	

3-45, line 36	"Since such changes could affect how the SWP and CVP under the BDCP would operate within a larger water supply framework, the analysis of the No Action Alternative in this EIR/EIS is intended to identify the predictable or foreseeable actions of California water suppliers other than DWR and Reclamation under a long-term scenario in which a BDCP is not approved or implemented."	Here is a clear double standard being applied by the BDCP EIR/S. The EIR/S says in other parts of chapter 3 (see related comments) that it cannot include actions of third parties that would be required for a California master water plan. And yet, here is the statement by the BDCP that says that they are including actions by third parties that are out of their control as part of the No Action alternative description. These might be appropriate under the cumulative analysis, but not in the No Action and applying the prohibition of actions that are third party dependent from the Proposed Project, but integrating them into No Action assumptions is clearly inconsistent and biased by the BDCP EIR/S.	
3-45, line 41	"such conditions would likely entail continuing uncertainty of SWP/CVP south Delta exports, continuing vulnerability in the south Delta to long-term reductions in water quality due to sea level rise, and continuing vulnerability resulting from a major seismic event harming Delta facilities so as to temporarily halt export operations.	The BDCP EIR/S analysis clearly shows that the variations in water supply deliveries vary more from year to year (water year type to water year type) under the Proposed Project than under the No Action. The EIR/S analysis determined that the Proposed Project has "Significant and Unavoidable" water quality impacts in the delta and these impacts are in addition to those that occur under the No Action alternative, so the BDCP EIR/S quote is obviously in error. The proposed project does nothing to improve south of delta CVP/SWP seismic reliability. If those facilities fail it is the same failure to deliver water as if the delta facilities fail.	
3-46, line 12	"An emergency spillway would prevent the intermediate forebay from overtopping by spilling to an adjacent approximately 350- acre inundation area. From this forebay, water would be pumped by an intermediate pumping plant..."	This description is inconsistent with the current proposed project description so all of the impact analyses related to this topic and facilities footprint are wrong and must be redone.	
3-51, line 22	"CDFW would approve the BDCP as an NCCP and issue permits pursuant to Fish and Game Code Section 2835 to DWR for the incidental take of covered species from the construction, operation, and maintenance associated with water conveyance, ecosystem restoration, and other activities as described in the BDCP..."	It seems like the BDCP EIR/S rarely passes up an opportunity to be predecisional and biased. The CDFW does not have to approve the BDCP or issue permits as that is their authority to decide. The EIR/S also presumes and is predecisional that the BDCP Proposed Project will be the one that is approved and permitted rather than it potentially being another alternative from the EIR/S.	
3-52, line 31	"Lined or unlined canal between the intake pumping plants and an intermediate pumping plant."	There is a huge difference in construction equipment, materials, and impacts for a lined vs. an unlined canal. The difference between unlined and lined makes a huge difference in impacts. The conveyance is supposed to be a project-level description and impact analysis. This clearly is not. There is also much more detail regarding the conveyance facilities design description for Alternative 4, the Proposed Project, as compared to this alternative. The EIR/S is required to do an equal level of detail analysis between the alternatives and in this regard the document clearly fails. The document must be revised to provide a true project-level of detail and consistent level or detail and analysis of the alternatives.	

3-54, line 2	"3.5.3.2 Conservation Components Conservation components under Alternative 1B would be identical to those under Alternative 1A. 3.5.3.3 Measures to Reduce Other Stressors and Avoidance and Minimization Measures to reduce other stressors and AMMs under Alternative 1B would be the same as those under Alternative 1A."	This is a good example of alternatives that fail to provide any reasonable range of alternative. The conservation components and other stressors components are exactly the same for almost all the alternatives. - see related comments.	
3.5.9	The EIR/S provides a different level of detail between alternatives.	Alt 4 had 6 pages of description and detail and alt 3 had 2 and an eighth pages. This is hardly the equal level of detail of project alternative development and analysis that is required in the EIR/S.	
3-65, line 33	"Borrow areas and areas identified for the storage and/or disposal of spoil, RTM, and dredged material.	This is not a project-level description as the differences between these different potential uses of borrow areas used for these different purposes have significantly different environmental effects. We don't know what "RTM" is. The BDCP is purposely not making the document accessible to the layman by using unexplained jargon and acronyms.	
3-85, line 21	"...sites were recommended based on the site's ability to minimize effects on aquatic and terrestrial species, maintain a diversion structure's functionality, provide adequate river depth, provide adequate sweeping flows, maintain flood neutrality..."	The FFTT did no analysis to evaluate the resulting impact of intakes on flood neutrality. This analysis would have required bathymetry and detailed intake designs the FFTT did not have. This BDCP claim is false and predecisional and must be retracted.	
3-85, line 30	"These construction activities would necessitate realignment of existing roadways, employee parking, lighting, fencing, control and communication devices, and landscaping. A new perimeter berm would be constructed, and the space enclosed by the existing levee and new perimeter berm would be backfilled up to the elevation of the top of the perimeter berm, creating a building pad for the intake structure and adjacent pumping plant."	None of these requisite components of a diversion facility were disclosed in the original or subsequent NOI or NOP. Without the disclosure of the requisite components of the project in the NOI and NOP, the public was not aware of how the project may affect their quality of life and livelihoods. These facilities will affect residents miles away from the location of the facilities (noise and light pollution and visual blight on the pastoral landscape) and the public was not aware of that during the public scoping process due to the lack of disclosure of the NOI and NOP. The BDCP purposely withheld this information from the public during the scoping period to avoid public awareness of the implications of the project and consolidating project opposition. The NOI and NOP must be reissued to address these and other deficiencies - see related comments.	
3-85, line 35	"A conceptual rendering of the intake design is provided in Figure 3-19. A schematic of a typical intake structure is shown in Figure 3-20.	"Conceptual" and "typical" intake designs certainly do not meet the test of a project-level conveyance analysis or disclosure. The EIR/S CM1 description falls very short of a project-level description and analysis and therefore must not be issued take or construction-related permits based on this EIR/S document. If this document is revised to provide that level of detail, that constitutes a material change in content and warrants reissuance of the document for public review and comment.	

3-86, line 16	"A typical new perimeter berm would have a broad-based, generally asymmetrical triangular cross section. The berm height, as measured from the adjacent ground surface on the landside vertically up to the elevation of the berm crest, would range from approximately 20 to 45 feet to provide adequate freeboard above anticipated water surface elevations. The width of the perimeter berm (toe of berm to toe of berm) would range from approximately 180 to 360 feet. The minimum crest width of the berm would be 20 feet; however, in some places it would be larger to accommodate roadways and other features. Cut-off walls would be constructed to avoid seepage, and the minimum slope of levee walls would be three units horizontal to one unit vertical."	A project level project description must have the number of cubic yards of fill material and location of fill material source. Only with this level of detail can the air quality impacts of the project be determined. The BDCP EIR/S description is clearly lacking anything approaching this required level of detail and does not indicate where or if this information could be found in the document. The EIR/S CM1 description falls very short of a project-level description and analysis and therefore must not be issued take or construction-related permits based on this EIR/S document. If this document is revised to provide that level of detail, that constitutes a material change in content and warrants reissuance of the document for public review and comment.	
3-87, line 1	"From the river bottom to the top of the structure, the intake structure would be approximately 55 feet tall, with the top deck elevation aligning with the top of the adjacent levee to maintain flood protection and provide access. Depending on the height of the river at the intake location, the intake would rise above the river's surface by 20–30 feet.	This description does not fit the conditions at the proposed north delta intake locations. It says the top deck of the structure would be at the adjacent levee height and be 20 - 30 feet above the river depending on river height. Full flood flow stage elevations of the river in the areas of the proposed intakes are within just a couple feet of the top of the levees so the description of the BDCP of 20-30 feet of freeboard is outrageously and scarily ignorantly far off from an engineering perspective for a project description that the BDCP claims is at a project level of detail. The top of the levee is only 20-30 feet above the height of the surface of the river under low flow conditions, e.g. 10K cfs or less.	
3-87, line 6	"… the elevation of the top rim of the surge tower would be approximately 65–70 feet (North American Vertical Datum of 1988 [NAVD 88])."	The description provides an absolute elevation of the tower, but not one relative to the land surface elevation. If the elevation at that poorly described location is 10 feet, then the tower is 55'-65' above ground level? The BDCP must provide a specific elevation of the structure and volumetrics, not an absolute elevation range, in order to meet a project-level description and dependent analysis.	
3-87, line 8	"The elevation of the top of the surge towers would range from approximately 70 to 105 feet."	That is a significant range in height (50% from low to high) and it is undetermined if that is absolute elevation or elevation of the structures above the ground level. This is obviously not a project-level detail, description and analysis.	

3-87, line 10	"The intakes would be sized to provide screen area, in accordance with federal and state standards, sufficient to prevent entrainment and impingement of salmonids and delta smelt. The intake sizes (length along the river at the face of the intake) would vary depending on intake location from approximately 700 to 2,500 feet for the pipeline/tunnel, modified pipeline/tunnel, and east alignments; and from 850 to 2,300 feet for the west alignment. Each intake, with the exception of the intakes proposed for Alternative 9, would have a maximum conveyance capacity of 3,000 cfs."	It is not reassuring that the only detail provided on the intake project-level design is that whatever the unspecified design may end up being that the BDCP assures us it will be compliant with standards. Then the description goes on to give a huge range of intake lengths from 700 to 2500 feet long (a 350+% increase from low to high is not a small or insignificant range). This intake description does not meet a project-level of detail and does not merit issuance of take- or construction-related permits. The document does not indicate that there may be more detailed descriptions of these designs to be found elsewhere so if they do exists, they might as well as not have been disclosed at all for how reader unfriendly the BDCP has consistently made this document. All intakes but one absurd and unprecedented size set of intakes at 7,500cfs (alt 9) are all at 3,000cfs which definitely does not represent a reasonable range of alternatives for intake size.	
3-87, line 17	"The fish screen sizes, like the individual intake sizes, would vary depending on intake location and would range from 10 to 22 feet in height and from 915 to 1,935 feet in length."	In the preceding BDCP EIR/S paragraph (see preceding comment), the BDCP EIR/S says the shortest intake is 700 feet and in this quote, one paragraph later, it says it is 915 feet. The description is clearly inconsistent and must be corrected. If analyses were conducted on a 700 foot length assumption for duration of fish exposure to the screens and the actual length is 915, then the analysis must be redone. A project-level analysis of fish screens requires 2D or 3D modeling of water approach and sweeping velocities at the fish screen face in order to meet the test of best available science as this level of analysis is well precedented and is the anticipated standard for this type of in-water structure environmental analysis. Since the BDCP doesn't know even know the length of their proposed screens, it could not have done this requisite level of analysis that would potentially warrant issuance of take and or construction permits.	
3-87, line 19	"It is anticipated that the screen cleaning system would include several traveling brush cleaning systems installed on the waterside of the intake. As an alternative to the fixed screen panel and brushing system, a traveling screen system with a screen belt and stationary brush/water jet system could be used."	There is a big difference in impacts between these two screen cleaning systems in terms of injury to fish and creation of predator holding habitat and predation rates at the screens. The BDCP does not say for sure which one they plan on using so the EIR/S cannot evaluate and disclose the differences in impacts between these two screen cleaning options. Without the BDCP selecting, defining and analyzing the specific screen cleaning option, this document cannot be considered project-level analysis for the conveyance and cannot be issued take- or construction-related permits based upon it.	
3-87, line 25	"Radial gates downstream of the intakes would limit flow to this maximum, while slide gates on each bay would equalize approach velocity across the face of the fish screen."	There would be radial gates on Georgiana Slough? Radial gates may regulate the total flow, but even if they are right up against the screens, they cannot regulate approach velocities across the screen. This description, that is supposed to be at an equal project-level of description, makes no sense.	
3-87, line 33	"Although the intake fish screens would remove debris and sediment from the intake inflow…"	Screens with 2mm openings do not screen out sediment. The approach velocities are far too low to entrain sediment even a quarter that size. This description is incorrect and misleading with regards to the screens functioning as a component of the sediment separation function of the design.	

3-87, line 40	"The sedimentation basin would be approximately 120 feet long by 40 feet wide by 55 feet deep, and would have interior concrete walls to create separate sedimentation channels."	Again, this description is too generalized and has too big a range of size to conduct a project-level impact analyses and the document does not direct the reader to any other part of the document to find this information.	
3-88, line 13	"It is anticipated that during most periods when five intakes are operating at about 3,000 cfs each, approximately 137,000 dry pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment load in the Sacramento River, the daily mass of solids would be expected to increase up to 253,000 dry pounds per day. The annual volume of solids is anticipated to be 486,000 cubic feet (dry solids basis).	This is an analytical conclusion, not a design description. This conclusion is also wrong and misleading as the suspended sediment load of the Sacramento River varies greatly based on time of year, upstream tributary conditions and activities and general preceding precipitation events. The sediment loads during "most periods" will certainly not be half the "high sediment load" as described in the BDCP EIR/S quote.	
3-88, line 21	"Suction dredging around the intake structures using raft- or barge-mounted equipment and pumping sediment to a landside spoils area."	The BDCP fails to define a project-level description and analysis of the dredging activities which would have had to include: dredging locations, seasonal timing, volumes, frequency, equipment to be used, hours of operation, number of personnel, parking and staging locations, barge parking and unloading locations, dredging mitigation plans and fish avoidance plans, dredge spoil disposal plans and dredge spoil contaminant contingency plans.	
3-88, line 39	"Each of the pumping plant sites would be approximately 1,000 by 1,000 feet (approximately 20 acres)."	1,000' by 1000' is 22.96 acres. It is not approximately 20 acres as the BDCP claims, it is approximately 23 acres. The BDCP's description understates the size of the pumping plant site by 15% which is a significant understatement and under-disclosure of impacts. The BDCP must rectify this inaccurate representation and correct the impact analyses that were conducted on this erroneous understatement of the pump plant footprint size. This understatement of BDCP facilities size and impacts is systematic and pathological throughout this document - see all of the related comments on BDCP understatements of impacts and project characteristics.	
3-88, line 42	"Under the modified pipeline/tunnel alignment (Alternative 4), each of the pumping plant sites would be approximately 1,800 by 1,500 feet (approximately 60 acres)."	1800 by 1500' is 62 acres. This is only a 3% understatement by the BDCP, but it is still a systematic understatement of impacts.	
3-89, line 9	"Pumping capacity could be varied by reducing the number of pumps on line and/or adjusting the pump operating speed."	The BDCP failed to propose or describe how the pumps would be operated when ramping up and down in diversion volumes during tidal changes that affect tributary flows and velocities that the operations must comply with. The method that the pumps are ramped up and down have impacts on power demand and the local and regional power grids. Without the missing operational description of how the pumps are ramped up and down, the requisite analysis of project-level power impacts cannot be evaluated and disclosed. The pump operations must be tied to the north delta intake operations model, which is also missing from the project description and analysis - see related comments.	
3-89, line 19	"Ground improvements would also be needed to improve foundation materials that are susceptible to liquefaction."	What undisclosed improvements are those? These would likely have significant undisclosed impacts and risks to human health and safety. These must be disclosed, described, evaluated and mitigated.	

3-90, line 6	"This substation and its transformers would convert power from the conveyance facility's main 230 kV transmission line to 69 kV, for use by the pumping plants and other facilities."	We don't recall there being any analysis of the electromagnetic affects on human and animal health from these substations and power converters.	
3-90, line 31	"...the levee roads would need to be realigned."	A realignment is a shift in the path of the road within or near the existing roadbed. The BDCP is proposing a rerouting of the state highway around the intakes that will add miles to the length of the highway to this short but critical transportation infrastructure to the delta. This BDCP rerouting of a state highway has impacts on transportation costs and emergency response. Again, and systematically, the BDCP has misrepresented the description of the project so that it can downplay the impacts of the project.	
3-91, line 14	"Periodic mussel cleaning in the sedimentation basins and solids removal from solids lagoons for off-site disposal would be required. Sediment in channels would also be removed periodically."	The O&M description does not identify or disclose any use of hazardous or special handling requirement materials such as moluscicides, herbicides, pesticides, fungicides, chlorine, cleaning agents, paints, solvents, aerosols, etc. Nor does it describe the storage or disposal of the materials including the potentially contaminated sediments separated at the intakes. Without these descriptions and disclosures from the BDCP, these risks and impacts cannot be assessed and disclosed in the EIR/S.	
3-91, line 16	The O&M description of the intakes is substantially incomplete.	The BDCP does not say one word about how the intakes must be operated in order to comply with fish screen criteria. All of the proposed intakes are in intertidal reaches of the river that have significant variations in flow and water column velocities throughout the tidal cycles - see related comments. In order to not violate the minimum sweeping velocity and duration of exposure to fish, the diversion volumes must be ramped up and down on the tidal cycle - see related comments. If they are not, as an example, at a slack tide with zero velocity the smelt and juvenile salmonids would be exposed to the intakes for hours. This duration of exposure certainly overwhelms the fishes sustained swimming speed performance - see related comments. As stated in numerous other comments, the north delta intakes and tunnel must have an operations model, just like every other element of the CVP/SWP currently does - see related comments. without a north delta intake and tunnel operations model, there is no feedback loop to CALSIM to ensure that monthly water deliveries result in continuous compliance of the intake screen operations - see related comments.	
3-91, line 19	"Depending on foundation material, foundation improvements would require excavation and replacement of soil below the new levee footprint and potential ground improvement."	The BDCP does not know the nature of the foundation material at the proposed intake sites nor does it know what or how much foundation improvement is required. The BDCP does not even describe or evaluate the worst case scenario to provide coverage for permitting, so instead it does nothing on this topic to evaluate or disclose these impacts. This is clearly not a project-level description or impact analyses and clearly does not warrant issuance of take- or construction-related permits based on this EIR/S.	
3-91, line 22	"All construction and modifications will comply with applicable state and federal flood management, engineering and permitting requirements."	Promises don't mean anything in the absence of designs and analyses that prove conformance with requirements. The BDCP must prove that the intakes will result in a flood neutral impact. To do this they would need: detailed intake designs, engineering scale channel cross sections and bathymetry, calibrated stage discharge curves at the intake site, 2D modeling of backwater affects of the intake and consultations with the USACE. The BDCP has absolutely not a single one of these.	
3-92, line 25	"To the extent possible, all in-water construction activities would take place between June 1 and October 31."	Emphasis added. How much work would occur outside of this seasonal window that is timed to reduce exposure of T&E fish species to construction-related impacts? What determines what is possible? How much is too much? The BDCP must commit to only constructing under the June 1 - October 31 period or disclose exactly what deviations it plans from that. The document identifies a fish rescue plan, but does not identify minimization and mitigation measures for pile driving impacts on fish such as bubble curtains to dampen noise and fish avoidance measures. These are significant omissions of the current document description of the alternatives and plan.	
3-92, line 37	"The intake structures and associated bank protection would permanently change existing substrates and local hydraulic conditions in the immediate vicinity of the intakes."	The BDCP never describes how the intake construction would protect the critical toe of the levee to protect levee integrity. This is a significant risk for levee failure for the BDCP to have omitted, but seeing as none of the conveyance facilities are described at a project level of detail, this omission is consistent with quality and completeness of the rest of the document.	

3-92, line 39	"The Sacramento River would remain navigable during construction of the intakes."	This is a declaration of a conclusion of an analysis, not a component of the project or alternative descriptions. The statement is also incorrect. The river is not 400' wide at some of the proposed intake locations, it is 300'. The cofferdam is 60' wide and the no boating exclusion zone around the cofferdams would be an additional 100'. This would mean the project would block up to 53+% of the entire river width. For commercial ships or barges, navigable depths of the river may only be in the middle of the river so subtract 50' width from the other side of the river for the navigable channel. Barges can be 50+ feet wide and are part of an important infrastructure in responding to emergency levee breaks. A large barge would have only a 90' navigable channel for it's 50' width which is a navigation hazard and impairment. The USACE is the ultimate judge of what is and is not a navigation hazard or impairment, so the BDCP should have consulted with the USACE on this matter rather than making unsupported and incorrect claims of no impact in a section that is	
3-93, line 10	"If open-cut trenching is used and the native materials are generally of good quality in the area of conduit construction, excavated material from the trench would be used as embedment and backfill materials. If the native soils are not suitable as foundation materials for the trench, suitable materials would be imported to the site."	This is definitely not a project-level description. The BDCP does not know if the local soils can be used as trench fill or if they will have to be imported. It they are imported or not has traffic and air quality impacts that the BDCP has not analyzed or disclosed. This is clearly not a project-level description or impact analyses and clearly does not warrant issuance of take- or construction-related permits based on this EIR/S.	
3-93, line 14	"Cut and cover construction would likely be used for landside pipe placement using long reach backhoes, scrapers, and excavators placed on levees or on the landside of the levees."	To meet a project-level description to support a project-level impact analyses that would warrant take and construction related permits, the description must include the number, type of equipment used (down to the make and model) and the number of hours and date ranges the equipment would be used. The BDCP provided none of the project level requisite information.	
3-93, line 30	The BDCP project description of the tunnels never says how thick the cement wall is.	The description gives an inside diameter, but not an outside diameter or a tunnel wall thickness. Without the thickness of the tunnel walls being defined and disclosed, the volumetrics from the amount of cement to be used cannot be calculated. Without the amount of cement to be used, the staging areas with cement batch plants cannot be sized, the amount of energy used for transportation of cement can't be determined and the amount of truck traffic and air pollution associated with the tunnel construction cannot be evaluate, disclosed or properly mitigated. The BDCP must provide a complete project-level project description that includes the tunnel wall thickness, volumetrics, etc. so the required project-level impact analysis can be done. Until the project description is completed and the project-level analysis done and released to the public for review, the BDCP project must not be issued take or construction-related permits.	
3-93, line 31	"The tunnel system would be operated under pressurized conditions at a constant volume with isolation facilities to allow reducing the number of tunnels in operation during periods of lower flow and to maintain velocity in active tunnels."	By only operating one of the two big tunnels under lower flows, the BDCP only makes the problem of stagnating water in the idle tunnel a more frequent and longer duration event than we have identified in previous related comments. As stated in other comments, the water that goes stagnant in the idle tunnels will go anaerobic and anoxic and be a contaminated water treatment and disposal problem rather than water supply. The stagnant water from the tunnels from the idle intakes are a particular problem as how will the BDCP operations keep that contaminated water from mixing with the fresh water in the intermediate forebay when the idle intake pumps are started after being off for weeks or months at a time? The BDCP does not discuss or disclose this impact.	
3-94, line 5	The description never addresses how the tunnels propose avoidance of active or abandoned gas and water well casings.	Many wells exist in the delta and only a portion of them are available on well log documentation. There is a significant risk of the TBM hitting one of these undocumented casings - see related comments. The "Big Bertha" TBM is Seattle is a good case study for the unmitigated risks the BDCP is engaging in without a well casing avoidance and risk minimization plan.	

3-94, line 5	The description never discloses the "gassy tunnel drilling protocol".	The BDCP identifies that there is a risk of gas collecting in the tunnel during drilling and says it will use gassy tunnel drilling protocols. The BDCP never describes or discloses these protocols, so it has failed to implement an avoidance, minimization and mitigation measure for the risk of tunnel gas explosions that would risk surrounding levee failures and workers and community health and safety. The BDCP says it will have a protocol for the drilling process (spoiler alert - it doesn't), but it never says what measures the project would take to mitigate the risks of gas (explosive, toxic, or otherwise) building up in and/or being released from the operational tunnels. This risk is elevated during periods of low to no flows when out gassing of methane from breaking down organic materials in the tunnels is high. The BDCP must propose avoidance, minimization and mitigation measures for these significant risks of the BDCP construction and operation.	
3-94, line 20	"Road access to the top of the pad will be provided for maintenance vehicles."	The description does not disclose the size of the access ramp. This is a footprint impact of the project and presumably represents additional lands that would be condemned for the project. These impacts must be disclosed and evaluated.	
3-94, line 27	"Maintenance requirements for the tunnels have not yet been finalized."	See comment above about missing mitigation action for gas or toxin accumulation in the tunnels during operations. See previous other comments regarding the anoxic water that will come out of the tunnel after periods of low or no operations and the treatment and disposal impacts it creates. The tunnels will have sediment that must periodically be removed as tunnel velocities below about 5fps will allow sediment to precipitate in the tunnel - see related comments. The BDCP obviously anticipates the need to dewater the tunnels, but does not provide any description of those operations nor disclose the impacts of them. As an example, in the dewatering process, is foreign water going to be introduced into tributaries that will cause straying of salmonids? We don't know because the BDCP has not defined this operation. The BDCP must also anticipate that the tunnels will be colonized by exotic and invasive mussels and clams. These will periodically have to be removed. These removal processes will likely involve toxic and hazardous materials. The BDCP has failed to identify, characterize, evaluate, quantify, disclose or mitigate for these impacts. With no maintenance plan, this pro	
3-94, line 27	The BDCP did not describe any emergency response plans to protect or repair the facilities.	Any project-level operations plan requires a series of emergency response plans to address and mitigate for all reasonably foreseeable emergencies that could occur at the facilities. These emergency responses should have included: fire, earthquake, flood, power outages, prolonged power outages, levee break flooding, levee break scouring, structural failure of the tunnel or related facilities, puncture of the tunnel by dredging or drilling, emergency dewatering of the tunnels, maintenance or inspection boat loss, maintenance or inspection diver loss (DWR should be acutely aware of this one given its recent loss in the SWP canal), autonomous vehicle loss, toxic gas accumulation, explosive gas accumulation, gas explosion, sudden flow stoppage water hammer, terrorist threat, etc. The BDCP did not provide even one of these obviously required operational and emergency response plans. Plans do not have environmental impacts but staging equipment and supplies (which may be toxic or hazardous) do. These plans must be developed and disclosed so that the public is aware of the types and magnitudes of these risks and what the potential environmental affects of impler	
3-95, line 9	"Intervention (or safe haven) zones could be situated at intervals of 2,000 feet along the tunnel alignment. These subsurface intervention sites would be constructed by injecting grout from the surface to a point in front of the TBM."	Here is a whole other category of project footprint impacts that has not been defined to a project-level or analyzed, disclosed or mitigated in the EIR/S. So the BDCP is saying here that somewhere (undefined), approximately every 2,000' along the length of the 35 mile long tunnel that there will be surface site that will inject slurry into the soil. This means there would be 92 sites of surface disturbance of unknown size and location that would have impacts that the BCDP has not analyzed, mitigated or disclosed. The BDCP must defined where these site would be, describe the equipment used and duration, analyze traffic and air quality impacts, evaluate temporary and permanent habitat and land use modification, disclose other impacts and mitigate for these impacts.	
3-95, line 35	"If needed, supplemental environmental compliance documentation will be completed."	This is called piece-mealing the environmental impacts of a project and it is in violation of NEPA and CEQA. The sites must be identified and their impacts identified in the revised public draft BDCP EIR/S as these sites are a requisite part of the construction of the tunnel, not a separate project or one occurring far in the future unrelated to the construction.	

3-95, line 36	"The proposed tunnels are anticipated to be constructed in soft, alluvial soils with high groundwater pressures."	The soil core sample number and distribution taken by DWR near (rarely over) the tunnel conveyance route are insufficient for the BDCP to claim that they have any certainty regarding soil conditions they will encounter over the 35 mile conveyance route - see related comments. There is a 7 mile stretch of the route that no cores were taken, so the BDCP has no idea at all what is going on there. This BDCP statement is just wishful thinking that is not backed up by fact. The BDCP must evaluate what the impacts to the schedule and environmental consequences would be if the material is not of soft alluvial material. The BDCP also has no contingency plan or analysis to cover the impacts of contaminated soils spoils - see related comments.	
3-96, line 2	"A diesel-powered train would transport construction workers through the tunnel during construction."	In order to have a project-level impact analysis that could potentially warrant construction permits the BDCP must define, disclose and analyze the impacts. It must define: what make and model of train, how many trains, and how many hours per day operated, locations of train operations. The current document provides none of this information, so the document does not meet a project-level analysis.	
3-96, line 16	"Soil conditioning agents such as foams, polymers, and bentonite may be used to make soils more suitable for excavation by a TBM."	Soil conditioners are used for materials handling and transport, not for excavation.	
3-96, line 34	"...it was assumed that RTM would be stacked to a height of 10 feet..."	It is hard to see how a 10 deep pile will air dry. A pile this high will also disrupt local drainage and redirect flood flows, both of which are significant impacts the project did not identify, disclose or mitigate.	
3-97, line 34	"Depending on the type of soil removed through tunneling, the type of soil conditioners added, and the material management and water treatment processes required, RTM may be reused locally (e.g., for levee reinforcement or as fill material in support of restoration activities) or transported to another location for reuse."	That statement has absolutely no certainty or specificity. It all might be reusable or none of it. It might be reused for some things, but they don't know if or where or how much. The BDCP must be able to answer all of these aspects of tunnel spoil disposal. The possible outcome that the BDCP does not include here is that the tunnel spoils may be contaminated such that they must be treated as a class 1 material. They have not discussed this nor have they evaluated the impacts of it or provided mitigation plans for it - see related comments.	
3-98, line 18	"In areas where the existing ground slopes toward the canal on both sides, a drainage ditch would be constructed along both sides of the canal to collect water and direct it to collection points for removal by pumping."	This discharge of the project will have to be permitted by the RWQCB and meet discharge water quality standards. The BDCP failed to identify the need for this permit and did not describe or disclose the water treatment facilities that would be required.	
3-98, line 38	"Use of a drainage ditch parallel to the canal to control seepage and groundwater levels. Water in the drainage ditch would then be pumped into the sloughs or back into the canals."	See preceding comment. Also see related comments on foreign water introduction and impacts on salmonid straying.	
3-99, line 6	"Under the canal with a culvert to existing drainage systems."	middle part of the culvert would be 100+ feet from either end and under no flow conditions would go anaerobic. This would become a toxic mess during flood flows and/or pump out operations of the drainage ditches. This inundated culvert would become permanent mosquito breeding habitat. These impacts have not been disclosed or mitigated by the BDCP EIR/S.	
3-99, line 7	"Over the canal with an overchute to existing drainage systems. Overchutes require piers similar to those supporting bridges to support the structure and span the width of the canals."	Whoever wrote this knows nothing about the delta. The delta does not have the kind of terrain elevation drops in drainages that would make this type of flood bypass feasible.	

3-99, line 9	"Around the canal and through a gap between the existing levee and the ends of the canal embankments."	So the flood flows scour the levee and cause another levee failure - brilliant.	
3-99, line 11	"To new storm drain pumps that would pump the water to sloughs or the canal."	Storm water discharge permits required and probably water treatment required prior to discharge. No water treatment plants for this were identified in the EIR/S.	
3-99, line 12	"Construction of irrigation ditches to supply water for agricultural use may be required in areas where irrigation water supply ditches are separate from drainage ditches. The irrigation ditches would likely need to be elevated above the existing ground to allow for gravity flow. New pumps or siphons may be required to supply the irrigation ditches."	This sounds like a mitigation. To be project specific the EIR/S needs to describe where, when, how many, what footprint, what size pumps, how often run, etc. The BDCP has not defined any of these so this is not a project-level description. Additionally, Alt4, will also require these facilities and did not describe or disclose them there either.	
3-100, line 8	The BDCP did not describe head control structures that would be required for intermediate pumping stations and siphons.	Water trapped behind the head control structures would build up algal loads during periods of low and no flow operations. The algae will cause taste and odor impacts on drinking water quality that the BDCP did not evaluate, disclose or mitigate.	
3-100, line 8	The BDCP did not describe wind induced wave erosion control structures that would be required for the canal.	The highest velocity winds that occur in the delta tend to be north winds. The canal is oriented largely north south on all alignments so the white cap waves should be spectacular and highly erosional. The BDCP identified a concrete lining near the top of the canal, but did not provide for erosion from waves when the canal is less than full during periods of low or no operations.	
3-104, line 35	"Under the pipeline/tunnel alignment, an intermediate forebay near Hood would provide storage of approximately 5,250 af with a surface area of 760 acres and would provide a transition between the north Delta intakes and the intermediate pumping plant."	We believe the BDCP has revised the size and location of this facility since the release of the PDEIR/S. All of the operations modeling and impact analyses and that were conducted on this out of date definition are incorrect disclosures of what impacts would occur based on the project that is currently being proposed by the BDCP - see related comments. The revised project must receive full analysis in the revised PDEIR/S.	
3-104, line 40	"… this feature would also include a seepage cutoff wall to the depth of the impervious layer.."	It would be entertaining for the BDCP to disclose how deep the impervious layer is in this area. My guess is 1000+'. That is going to be one heck of a cutoff wall. The BDCP must disclose the volumetrics of this construction so that air quality, traffic and other appropriate impacts are disclosed and mitigated.	
3-105, line 1	"Limitations on delivery of water from the intakes into the intermediate forebay and the need to operate the intermediate pumping plant efficiently would limit the ability to deliver flow from the pipelines/tunnels during portions of the day to the existing Banks and Jones pumping plants."	This is the first acknowledgement we've seen that the BDCP anticipates the requirement of ramping intake diversions up and down daily (presumably based on tidal cycles). This does not constitute a description and disclosure of those intake operations. Emphasis added with underlining. So the BDCP says it is going to ramp up and stop flows in a gravity fed pipeline on a daily basis. The BDCP needs to recheck their math on the hydraulic gradient of the gravity feed from the headworks to the south delta facilities, tunnel coefficient of friction, and the mass of water stopping and starting as they are misrepresenting the tunnel operations and their ability to ramp flows up and stop them with gravity feed on a daily basis. This is another good example of why a north delta intake and tunnel operations model is required.	
3-105, line 13	"The pipeline/tunnel alignment would require two 33-foot diameter (minimum) surge towers,.."	The tunnel diameter of 40' is mismatched to the surge tower diameter so in the occurrence of a water hammer event the project has just created huge backpressures that will cascade back down the tunnel (exactly what the surge tower is designed to prevent) and the worlds largest water cannon as water will be accelerated up the smaller diameter surge tower. This under sizing of the surge tower diameter is dangerous to the tunnel integrity, would likely shatter the transition vault from the tunnel to the surge tower and be a danger to the workers and the surrounding population and areas.	

3-105, line 27	"It is assumed that the intermediate pumping plant would require periodic harvesting of pond weeds to maintain flows and forebay capacity."	The BDCP has not disclosed how they would dispose of the aquatic weeds harvested. They will emit greenhouse gas as they decompose and odor problems for neighbors. The BDCP did not quantify the biomass of weeds to be removed, the frequency of this operations, the disposal method or location, analyze the impacts of these operations or mitigate the impacts from these operations.	
3-105, line 43	"For Alternatives 1A, 1B, 2A, 2B, 3, 4, 5, 6A, 6B, 7, and 8, the Byron Tract Forebay would be constructed on the southeast side of Clifton Court Forebay."	Where are the design detail schematics, location, footprint, etc.? The BDCP has changed these since the issuance of the PDEIR/S, so the newest revisions of the Proposed project have not been disclosed to the public and even the ones that were current at the time of the PDEIR/S release were not provided. The BDCP did not disclose the DSOD deficiencies of Clifton Court Forebay - see related comments.	
3-106, line 6	"Additionally, a new embankment would be constructed around the perimeter of the forebay, as well as an embankment dividing the forebay into a northern cell and a southern cell. The northern end would receive water from Tunnel 2 (from the north Delta intakes), which would pass under Italian Slough in a culvert siphon before entering Clifton Court Forebay (north). The northern cell would provide storage of approximately 6,070 af. The southern cell of the forebay would continue to provide functionality for the existing through-Delta conveyance system and would provide storage of approximately 26,000 af."	That is a very confusing description, does not work without a supporting engineering schematic and this description provides insufficient detail for the EIR/S to evaluate. The divisions between the fish screened water from the north delta intakes and the unscreened inflows to the south delta intakes are particularly important to understand the mechanics for fisheries impacts. This description is inadequate to support the fisheries and water quality impacts assessments. How does this modification of Clifton Court Forebay work with the modification of a non-DSOD compliant facility?	
3-106, line 14	"New forebays would be dredged to remove sediment and maintain design capacity."	In order to meet project-level analysis, the BDCP needs to provide a schedule, equipment used, volumes removed, and disposal locations for the sediment removal. The BDCP has provided none of these.	
3-106, line 14	"Maintenance requirements for the forebay embankments would include control of vegetation and rodents, embankment repairs in the event of island flooding and wind wave action, and monitoring of seepage flows. Maintenance."	These maintenance actions would be required for all of the BDCP facilities: intakes, pumps, intermediate forebays, tunnel facilities, etc. but this is the only place these actions are mentioned. There is no detail provided as to what materials will be used. These will be controlled materials that require special handling, storage, application restrictions (e.g. spray drift management), and disposal or empty containers. The BDCP has provided none of these details or the frequency, magnitude or area extent of these actions.	
3-106, line 18	"Maintenance requirements for the spillway would include the removal and disposal of any debris blocking the outlet culverts. Dredging may be necessary to remove sediments in the forebays. As designed, both forebays are expected to have capacity to store sediment accumulated over a 50- year period. However, depending on the actual sedimentation rate, dredging may be necessary more or less often."	Where is the debris and sediment to be disposed and what quantity and frequency are anticipated? What equipment and how many hours of operation are required? These are all required for the impact analysis and full disclosure of the impacts of the project.	

3-106, line 30	"Much of the excavated material at both locations is expected to be high in organics and unsuitable for use in embankment construction. Some of the excavated material below the peat layers at both locations may be suitable for use in constructing the embankments. To the extent possible, spoils to be used for the embankments would be stored onsite. Under the modified pipeline/tunnel alignment, nearly 8 million cubic yards of material would be dredged from Clifton Court Forebay..."	What equipment, how many hours over what dates? Unless the BDCP provides this level of information it cannot and must not get AQRCB construction permits.	
3-107, line 24	"While only one of these points of interconnection would be used, both are depicted in figures, and the effects of constructing transmission lines leading from both sites are combined and accounted for in resource-specific impact analysis."	This is how a project-level impact analysis is supposed to be done. This is the first of the alternatives components that sounds like it was treated appropriately. This example is in stark contrast how all of the rest of the project components and the uncertainties of the footprint were handled, which was deficiently. The BDCP must reanalyze all of the project components that do not take this strategy of taking the largest potential impact of the project as it is described and evaluating those impacts to create a disclosure document that provides an envelope of action for the project. The project, with this one potential exception, is consistently deficient on this point.	
3-109, line 45	Description was provided to reduce raptor take associated with the transmission lines (in one case of a monopole), but no mention is made of measures to reduce other bird strikes.	The International Migratory Bird Treaty Act compliance requires that all projects incorporate measures to address impacts to migratory birds. There are many bird species in the Plan Area that are covered under this act and there are no described project features to avoid, minimize or mitigate their impacts.	
3-120, line 15	Barker Slough intake relocation appears to has been incorporated into the Proposed Project.	At no point can we find the disclosure of the rationale for why the relocation of the current intake appears to be incorporated into the BDCP project. Is this compensation/mitigation to Solano County for not objecting to the Yolo Bypass modifications, the impacts of the current CVP/SWP operations on their water quality or the impacts of the BDCP on their water supply quality?	
3-121, line 25	"...analyses consider typical construction, operation, and maintenance activities that would be undertaken for implementation of the habitat restoration and enhancement efforts."	There is no such thing as "typical" for these types of actions that have so little precedent in this geographic area and no precedent at this scale of habitat restoration. A "typical" construction analysis is particularly useless for water quality impact assessments of the project. Levee break locations, size, orientation, habitat inundation depth, contouring, vegetation plans, sucessional vegetation development all make a huge impact in the tidal exchange characteristics and water quality discharge of these habitat restorations. Further, without specific locations of these aquatic habitat restorations it further confounds and frustrates any meaningful analysis of the water quality impacts of these actions. As stated in previous comments, water quality affects of these habitat restorations are inextricably linked to CVP/SWP water quality operating constraints so these habitat restoration actions may not be done at a programmatic-level since they are having project-level impacts on operations - see related comments.	
3-122, line 13	"3.6.2.1 Yolo Bypass Fisheries Enhancement (CM2)"	As previously commented, the Yolo bypass action is part of the mandated conditions of the 2009 OCAP BO RPAs. The BDCP may have provided more detail, but this action belongs in the No Action description. Only the components of the description that are above and beyond the RPA can be considered part of the BDCP proposed project or alternatives - see related comments.	

3-125, line 15	"This conservation measure would be implemented under all action alternatives. CM2 actions are proposed for implementation in four phases: Phase 1—year 1 to year 5 of BDCP implementation; Phase 2—year 6 to year 10;…"	Given this BDCP proposed implementation timeline, this EIR/S must address these actions at a project-level of detail or there will not be time for a subsequent environmental document, engineering design, permitting, contracting, and completion of construction. Either project-level detail must be provided and analyzed in this EIR/S or the schedule of these actions needs to be pushed back in implementation. The delay implementing these actions would put DWR and Reclamation even further into violation of the implementation timeline mandated in the OCAP BO RPAs.	
3-125, line 20	"The Category 2 and 3 actions would be more fully defined and evaluated in the YBFEP and/or YBFEP EIR/EIS, as appropriate."	So the BDCP is describing actions and taking credit for the benefits of them for actions that will actually be or may be analyzed and implemented by a different project. These actions are described as being implemented by the BDCP in years 1 - 10 of the BDCP project - this description is clearly misleading and deceptive. These other project actions that the BDCP is taking credit for include: Component Project 4: Expanded Fish Rearing at Knaggs Ranch; Component Project 5: Fish Ladder Operations Study at Fremont Weir; Component Project 6: Experimental Sturgeon Ramps at Fremont Weir; Component Project 7: Auxiliary Fish Ladders at Fremont Weir; Component Project 8: Fish Screens for Small Yolo Bypass Diversions; Component Project 9: New or Replacement Impoundment Structures and Agricultural Crossings at the Tule Canal and Toe Drain; Component Project 10: Lisbon Weir Improvements; Component Project 11: Lower Putah Creek Improvements; Component Project 12: Water Supply Improvement for the Yolo Bypass Wildlife Area; Component Project 13: Use of Supplemental Flow through Knights Landing Ridge Cut; Component Project 14: Flood-Neutral Fish Barrie	
3-126, footnotes	"Improvements to Upper Putah Creek, outside the Plan Area, will be included as part of the YBFEP. Improvements to Upper Putah Creek will support fish passage, water quality, and spawning habitat improvements in Putah Creek upstream of the Yolo Bypass Wildlife Area and downstream of Solano Diversion Dam (Phase 1)."	This is another example of the BDCP violating their self imposed, unsupported and predecisional geographic constraint for potential actions to be included in the BDCP project or alternatives. Seeing as the BDCP can include actions outside of the Planning Area anytime they want, they cannot use the plan area as a criteria or rationale to dismiss other alternatives, e.g. upstream and downstream water storage - see related comments. If this is not a BDCP action and is being implemented only by the YBFEP, then the BDCP cannot portray the action as being a feature and benefit of the BDCP project as it has done here in the EIR/S.	
3-128, line 21	Phase 3 (Year 11 to Year 25)	The YBFEP is not part of the BDCP so here is another project action that the BDCP is taking credit for: Component Project 20: Sacramento Weir Improvements.	
3-133, line 28	"South Delta Restoration Opportunity Area"	From the Independent Science Review Panel comments from their private 2014 meeting with the BDCP it sounds like this ROA has been dropped from the BDCP proposed project and alternatives. The description of where the implementation may occur for all of the different habitat types must be revised to reflect this BDCP deletion of the South Delta ROA.	
3-134, line 11	"In some areas, tules could be planted and farmed for several years to raise the elevation of subsided lands."	Publications on tule cultivation to raise subsided lands indicate land can be raised by as much as 1/4 inch per year. So if "several years" from the BDCP is 4 then we should expect that they have raised subsided lands (temporarily) by approximately 1".	

3-136, line 29	The BDCP does not provide any description of the location, frequency, seasonal timing, duration, or volume of dredging or the disposal methods and locations of the dredge spoils.	Without this level of detail, the BDCP cannot have completed impact analyses of land disturbance, water quality impacts, fisheries impacts, air quality impacts from dredging or transport, greenhouse gas emissions from drying spoils, potential dredge spoil contaminants, land use changes, traffic and other impacts.	
3-136, line 33	"Roads and utilities on the levees to be breached or lands to be inundated that required modification would be constructed to a condition equal to or better than the preconstruction conditions."	Levees with levee roads that will be breached by the BDCP will be restored to have the same passage and access as prior to the project, so that means the BDCP will construct bridges over all of these breaches. If there are not bridges over the breaches, then the road access condition would not be as good as preconstruction condition.	
3-137, line 29	"Channel straightening and levee construction have disconnected river channels from their historic floodplains over much of the Plan Area…"	This is true and has been true for about a hundred years. The delta pelagic organism decline has only occurred in the last 20 or so years, so the causal mechanism the BDCP is trying to imply here is false. Look to other changes in the last 20 or so years as the primary culprit for POD. One of the primary changes has been the more aggressive reoperations and increased exports of the CVP/SWP operations.	
3-138, line 33	"In cases where farming is no longer feasible or compatible with floodplain habitat goals, discontinue farming within the setback levees and allow native riparian vegetation to naturally establish on the floodplain or actively plant native riparian vegetation."	Perennial vegetation in the floodplain will adversely affect flood flow capacities. These are not flood neutral actions.	
3-139, line 24	"At least 10 linear miles would be enhanced by year 10 of Plan implementation;…"	This means that the BDCP is anticipating a restoration action can be further developed, go through the entire environmental review, permitting, contractor selection, construction preparation and implementation process in less than 10 years. Add it up, it does not work and the BDCP will miss this schedule commitment. For any actions less than 15 years out, the BDCP must include them at a project-level of detail in this BDCP environmental document or it is certain they will miss their implementation schedule. This BDCP HCP planning process has already been 7 years in the making and it is not even past public comment yet.	
3-139, line 29	"Because of the riprap armoring on many levees, adjacent channel margins are devoid of vegetation or have only low quality vegetation that provides very limited benefits for covered species. Without vegetation along channel margins to provide shade and nutrient inputs, habitat value for covered fishes in these channels has declined. Both the quality and quantity of riparian, emergent wetland, and tidal mudflat habitat for covered terrestrial species have declined as a result of channel-margin levees."	It is the USACE's requirement for no levee vegetation that has reduced the riparian habitat quality. Look at the levees in Elk Slough. The habitat is diverse, provides cover, shade and a huge and diverse food base. Levees are not the problem, naked rip wrap mandated by the USACE is.	

3-154 line 29	"CM13 would provide for the control of Egeria, water hyacinth, and other IAV throughout the Plan Area."	The dictionary definition of "control" that is applicable to this BDCP claim is: "to eliminate or prevent the flourishing or spread of". These are lofty goals that are impossible for the BDCP to achieve. The BDCP will agree that it will not and cannot eliminate these aquatic weeds. Can the BDCP prevent the spread of these aquatic weeds? The answer is "no" and the mechanical removal of them will actually be the mode of action that mobilizes them for an increased rate of spread. The BDCP plan could temporarily stop them from flourishing, but that is not the same as "preventing" them from flourishing as in the definition of control. It is clear even from this cursory analysis that the BDCP cannot and will not "control" these aquatic weeds. The BDCP must revise this CM to reflect what benefit it can realistically provide rather than the current substantially overstatement of benefits.	
3-167 line 35	"3.6.3.11 Avoidance and Minimization Measures (CM22)"	These are all mitigations of impacts that only occur with the implementation of the Proposed Project. They minimize the amount of impact the project will have on covered species, but this does not contribute to conservation. Because these are only mitigations for project impacts they cannot be credited as contributing to conservation. The BDCP must remove these as a CM and correctly represent them as mitigations. Most of these mitigations are only commitments to create a plan in the future. Plans have no impacts or benefits so the commitment to create a plan must not be credited for any mitigation or contribution to recovery. Others of these are commitments to follow building codes, etc. These are legal requirements of the project, so these also do not contribute to mitigation or conservation. Consultation with other agencies is also not a mitigation or contribution to recovery.	
3-177 line 26	"However, because of the many factors affecting the ability to transfer water through the Delta, the actual quantities of water transfer water that may be facilitated as a result of the BDCP is speculative."	It may be speculative for how much excess capacity may be utilized in future water transfers, but it is not speculative to quantify how much excess capacity is created by the BDCP conveyance and project. As an example, the Lower Yuba River Accord water transfers through the delta and through the CVP/SWP system are very constrained by the lack of available unused capacity of the CVP/SWP. One of the impacts of the BDCP project will be to substantially increase the operational flexibility and utilization capacity of the system. The BDCP EIR/S must quantify and compare the amount of unused CVP/SWP capacity in the No Action and in the Proposed Project and alternatives. The increase in unused available capacity is potentially growth inducing so this impact must be evaluated, quantified, disclosed and mitigated - see related comments. The BDCP operations assumed that Reclamation would be a 100% partner in using all of their capacity through joint operations that would utilize the BDCP facilities. According the page 181 line 16, Reclamation will not be an owner or operator of the BDCP facilities and may or may not even wheel water through the BDCP facilities.	
3-181 line 13	"All CVP maintenance described in this section is a federal action associated with the BDCP (or an alternative) and will be covered in Section 7 consultation."	If Reclamation had done a section 10 consultation, then they would not have had any nexus with the BDCP project at all. Reclamation never did have a reason to participate in the BDCP project and it certainly did not have the project nexus to be the lead federal agency and equal co-funding entity of the BDCP EIR/S.	

3-181 line 16	"Although DWR would own and operate the new intake and conveyance facilities, and their operations would be covered activities as described in Section 3.6.4.2, Reclamation would likely enter into an agreement with DWR to wheel CVP water through the new facilities, and this action by Reclamation would be an associated federal action."	Talk about burying the headline. Here we are on page 181 of Chapter 3 of the EIR/S document and just now it is disclosed that Reclamation will not be an owner or operator of the BDCP facilities. Even Reclamation's roll for wheeling water through the BDCP facilities is speculative according to this quote. Given Reclamation's non-roll in the BDCP, Reclamation should never been a federal lead agency in this project. USFWS and/or NMFS must take over all administrative responsibilities as lead agency from Reclamation. Reclamation must explain why it provided equal amounts of funding for the environmental planning and predesign project engineering process for a project it will have no roll or ownership in.	
3-181 line 20	"All operations of new intake and conveyance facilities are included as either covered activities or federal actions associated with the BDCP (or an alternative) and the effects of those activities/actions are addressed by the BDCP and at a project-level of detail in this EIR/EIS."	There is not one single element of the BDCP Proposed Project conveyance or operations that meet the test of being a project-level impact analysis. The BDCP does not know the exact location or footprint (they give ranges) of the intakes or hydrodynamics of the intake screens in operation under a range of flow conditions - see related comments. The BDCP has not done any modeling of the intake hourly and daily operations - see related comments. The tunnel route has changed and there are no volumetrics on the amount of cement to be used - see related comments. The BDCP has not defined or disclosed what make and model equipment will be used in what locations for what hours over what period - see related comments. The BDCP says they have not defined what the tunnel conveyance maintenance operations will be yet - see related comments. The water operations are interdependent with the water quality impacts of the habitat restorations - see related comments. The habitat restorations are not even really described at a programmatic level. In order to have project-level operations, the habitat restorations impacts on water quality (that will often dictate	
3-182 line 25	"No more than 300 cfs can be diverted at any one intake."	This is worded as an instantaneous measurement, not as an average as the next sentence seems to imply.	
3-182 line 26	"While referred to as constant, pumping would vary with flows at Freeport."	Freeport cannot be used to measure flows at the intakes. The intakes are substantially deeper into the tidal prism than the proposed intake locations. The southernmost Proposed Project intake is easily 10 river miles downstream of the Freeport Gage. When was the last time the Freeport Gage was calibrated and how often does the BDCP propose it would be recalibrated? From the description, it sounds like only the flows at Freeport would be used to determine intake operations and compliance. The BDCP fails to take into account diversions that occur below the Freeport Gage but above the intakes, e.g. RD999 300cfs diversion just upstream of Clarksburg into Winchester Lake. The BDCP's description does not take their own diversion volumes into account either. If Freeport Gage is at 5,000 cfs the way this is written, if RD 999 and the three Proposed Project intakes were each taking their 300 cfs of water, then the flow at/below the downstream most BDCP intake would be 3,800cfs - a clear violation of the intent of the low flow diversion operating compliance requirement.	
3-183 line 15	North Delta Intake Operations Criteria	Where is the disclosure of the operations of the north delta intakes to maintain minimum sweeping velocities under tidal conditions? See related comments.	

Table 3-16	"5,000 cfs to 15,000 cfs - Flows remaining after constant low level pumping"	This bypass flow criteria is not well thought out. With flows at 5,001cfs at Freeport, the BDCP can run each intake at 300cfs. The BDCP fails to take into account diversions that occur below the Freeport Gage but above the intakes, e.g. RD999 300cfs diversion just upstream of Clarksburg into Winchester Lake. There are a number of other intakes in this reach that amount to another potential couple hundred cfs of diversions. The BDCP's description does not take their own diversion volumes into account either. If Freeport Gage is at 5,001 cfs the way this is written, if RD 999 and the three Proposed Project intakes were each taking their 300 cfs of water, then the flow at/below the downstream most BDCP intake would be 3,800cfs - a clear violation of the intent of the low flow diversion operating compliance requirement and this would dewater other water supply intakes and have significant water quality impacts. If it is a BDCP alternative with 5 intakes the remaining flow after the last intake would be 3,000 cfs or less (assuming additional existing diversions of 200cfs, e.g. RD 150. 3,000cfs of flow in the Sacramento River above Sutter Slough confluence is a horrible idea and has m	
Table 3-17	The cfs used here seem to be daily averages, but that is not disclosed.	Daily average bypass flows will do nothing to protect fish at the intake screens from inadequate sweeping velocities. Still nowhere in these north delta intake operations descriptions is there anything regarding how they will be operated under tidal low velocities, slack tide zero velocities or tidal reverse flows that occur in the river reach where the proposed intakes would be located - see related comments.	
3-187 line 17	"...open the 17.5-foot and 11.5-foot elevation gates when Sacramento River flow at Freeport is greater than 25,000 cfs to provide local and regional flood management benefits, while coinciding with pulse flows and juvenile salmonid migration cues, and to provide seasonal floodplain inundation for salmonid food production, juvenile rearing, and spawning. This action based on modeling assumptions would cause Yolo Bypass inundation of 3,000–6,000 cfs depending on river stage."	If the flow at Freeport is at 25,001cfs, the BDCP will open the Fremont weir gate and divert somewhere between 3,000 to 6,000cfs. Even taking the more favorable interpretation, the flow after opening the Fremont Weir gates would be 22,000cfs at Freeport. Would the BDCP then shut down the Fremont Weir gate because Freeport is below 25,000cfs? If they do as this is worded, then the frequent opening and closing of the Fremont Weir gates would cause horrific amounts of fish stranding in the Yolo Bypass. Obviously it makes no sense to use a downstream gage as the basis for an upstream operation as the BDCP has proposed, especially when the flow of the American River is between those two locations. The BDCP should use the gage on the Sacramento River downstream of the Feather River confluence. The BDCP has also never been clear that these bypass diversion flows will be accounted for in the intake bypass operations criteria. The BDCP must demonstrate and specifically clarify that these bypass flows are subtracted from the flows that will be used to calculate compliance with the intake bypass requirements - see related comments. This is another example of a propos	
3-188 line 24	"The in-Delta municipal, industrial, and agricultural water quality requirements criteria would require the SWP and CVP to comply with existing agreements with water rights holders related to operations of the SWP and CVP. These requirements include water operations in accordance with State Water Board D-1641 related to north Delta and western Delta agricultural and municipal and industrial requirements..."	It is these water quality operational requirements that will be directly affected by the BDCP implementation of the aquatic habitat restorations. The impact analyses of these consistently identifies that water quality coming out of these habitat restorations into the rest of the delta will be lower due to concentration of contaminants from reduced rate of water turnover (refreshening) and from concentration from evaporation. When these lower water quality volumes from the BDCP aquatic habitat degrade water quality at these compliance points, the BDCP will have to alter their conveyance water operations to comply. These can be major water operations changes in response to water quality degradation such as shifting from north delta diversions to south delta diversions or reducing the amount of diversions. This is why the aquatic habitat restorations must be at a project-level of detail if the BDCP wants their water operations to be analyzed at a project-level of detail. In the current BDCP EIR/S analysis, because the water operations have insufficient information on the location, size, design characteristics (e.g. water depth, intertidal hydraulic complexity, levee breac	

3-209 line 20	"...SWP water contractors contractually agree to repay all SWP capital and operating costs incurred for the water supply and fish and wildlife mitigation features."	The entire HCP/NCCP is a mitigation for fish and wildlife impacts from the CVP. The CVP contractors are therefore responsible for paying for all of the conservation measures and mitigations for the BDCP, not the public - see related comments.	
3-210 line 3	"One funding method would be to use existing payment provisions of the SWP Water Contracts under which DWR would charge the SWP water agencies for the costs of the BDCP…"	This sounds very uncertain. Either they should know this is how they will pay for it or not. This does not rise to the level of certainty of funding required to approve the HCP or issue take permits.	
3-210 line 22	"A consideration if all SWP contractors must participate in funding BDCP as a condition of an amendment is whether the costs to all contractors are feasible."	This sounds very uncertain. Either they should know if the water contractors can afford to pay for it or not. This does not rise to the level of certainty of funding required to approve the HCP or issue take permits.	
3-210 line 27	"Water Contract amendments or new funding agreements for implementing BDCP that include provisions for allocating benefits, such as more reliable water supply, to contractors who pay for BDCP, could create the potential for redistributing SWP water south of the Delta."	Exactly, this is why the updating and revising the Coordinated Operating Agreement must be part of the scope of the BDCP - see related comments.	
3-211 line 1	"If the final agreements or amendments have potential to have an environmental effect not already contemplated in the BDCP EIR/EIS, DWR would prepare additional analysis."	This is called piece-mealing the environmental impacts of a project and it is in violation of NEPA and CEQA.	
Covered Activities	Covered activities do not address all of the current CVP/SWP system (upstream tributaries, existing canals or on-going affects of CVP/SWP operations and water deliveries.	The EIR/S did not include analysis of impacts from on-going CVP/SWP operations, including: leaks, salt accumulation, erosion loss of habitat, degradation of beneficial uses, disposal of contaminants, greenhouse gas contributions, etc. Since this document does not address the existing facilities maintenance and operating impacts, the BDCP cannot be awarded any permits for coverage on these activities.	
	Some aspects of the covered activities that the BDCP is seeking immediate permits on were only analyzed at a programmatic level.	The BDCP is seeking permit coverage for current CVP/SWP maintenance activities. Some types of maintenance could appropriately be described at a program level, e.g. weed control, but other maintenance activities such as dredging in front of intakes and sediment disposal need to be described at a project level as they both have very specific impacts. The BDCP does not provide an adequate level of detail for these types of high impact activities and therefore any permits issued should not cover these activities.	
	A 50 year duration for the ITPs is too long for the uncertainties and lack of detail included in many important parts of the project description and analysis.	Given the level of certainty of the function of the conservation measures, climate change and other sources of impacts to the ITP covered species that could substantially alter their conditions and the relative needs for conservation from this project, a 50 year permit is too long a period. FERC hydroelectric facility licenses typically only last 25 to 30 years for this reason of anticipated changes in circumstances and therefore a more frequent need to update the license terms. The BDCP has many project aspects that are more prone to uncertainty than a hydroelectric facility relicensing. As an example, sea level rise is a major risk and change in circumstance for the BDCP project that is typically not a factor in the uncertainties constraining the appropriate duration of hydroelectric facilities licensing. The uncertainties in sea level rise impacts alone should limit the duration of the ITPs for the BDCP .	

	At no time should the project be allowed to degrade or reduce the amount or quality of habitat or reduce species populations in the course of the implementation of the project.	The pace of the amount of habitat lost to conveyance construction occurs at a much faster pace than the restoration and functional development of habitat restoration CMs. The level of detail provided in the EIR/EIS does not even allow a detailed accounting of habitat loss by type (species) by year or an accounting of the type and quantity by year of fully functioning habitat restoration or mitigation, so a detailed analysis to quantify this shortfall is not even currently possible. Degradation of habitat conditions have led to the listing of the species that the BDCP proposes to cover. Since the purpose of the HCP/NCCP is to conserve and protect the covered species, the project should not be allowed to result in a net negative quantity and quality of habitat for the listed/covered species at any point in time during the BDCP project.	
	The conveyance facilities and operations should not be called a "conservation measure" unless they actually contribute to conservation.	The document does not conclude that the conveyance and operations result in a reduction in take, so it does not meet the test of what should be called a conservation measure.	
	Some of the other stressor conservation measures would be implemented by third parties, e.g. invasive species removal, illegal fishing, etc.	Since the BDCP cannot guarantee the function or overall funding or even future existence of these third parties, the CMs implemented by these third parties do not meet the test of certainty and the potential benefits from these CMs should not be relied upon in determining contribution to conservation and justification for issuance of the ITPs.	
	Habitat restorations are the majority contributor to the conservation of the species that justify the take permits that are the objective of the project and allow the SWP to operate.	The beneficiaries of the project, the SWP water contractors should have to pay for the habitat restoration project, not the public through the public trust resource agencies.	

	The BDCP plan materially conflicts with other habitat conservation plans (HCPs) that are in various planning and implementation phases in the same locations/areas and same terrestrial species that BDCP proposes.	The BDCP is proposing to restore many of the same lands that are currently part of HCPs being developed by the delta counties: Sacramento, San Joaquin, Yolo, Contra Costa and Solano. The BDCP's plan is in direct and significant conflict with these other local and regional plans. These other HCPs were initiated first, are more developed/further along the approval process, have more specific plans (not just the nebulous and programmatic undefined future to be defined later proposals of the BDCP) and are closer in timing to implementation and contribution to the conservation of these species. The BDCP is disrupting the efforts and plans of these other HCPs to protect and conserve the many of the same terrestrial species as the BDCP proposed covered species. Because of this BDCP direct conflict with the other plans, the BDCP is actually reducing the overall near- and mid-term conservation of these species. This conflict with other HCPs and the resulting reduction in conservation for the BDCP proposed covered species was not adequately discussed or disclosed in the BDCP EIR/S. This significant direct impact to habitat that would have otherwise been created and implem	
	The BDCP impact analysis does not include the CVP/SWP reservoir operational impacts.	The BDCP Proposed Project does result in a reoperation of the CVP/SWP reservoirs, so the impact analysis that omits those effects is incomplete and deficient. further, because of this omission, the incidental take permits and covered activities should not cover reservoir operations, maintenance or their related impacts.	

	The description of operations and maintenance of the Proposed Project tunnel conveyance facilities do not include disposal of contaminated water from water stored in tunnels during nonoperational periods.	Water in the tunnels during periods of no diversions and water with extended periods in the tunnel from low diversion periods (500 cfs will result in a one week transit time) will have all the oxygen consumed from the water from biological oxygen demand. This will happen quickly in the nutrient rich and biologically active water diverted from the Sacramento River. Microbes will consume the oxygen and plankton that dies from lack of sunlight will consume additional oxygen as it decomposes. Once the oxygen is depleted the water will go anaerobic and anoxic. It will form taste and odor components that will make the water in the tunnel unsuitable for drinking water without significant water treatment. The anaerobic conditions will methylate the mercury in the water and accumulated in the tunnels creating a human and animal health hazard and a disposal and treatment problem for the CVP/SWP. The SWRCB 401 permit for the project should thoroughly address this water quality degradation and discharge issue and waters from the tunnel should not be allowed to be discharged into the delta or the CVP/SWP canals until it is treated to appropriate waste water disch	
	Covered activities do not include maintenance of all facilities that the BDCP will have to take responsibility for in perpetuity.	The BDCP has proposed a number of actions that will require them taking over responsibility for facilities maintenance for the life of the project. In other cases, mitigations are responsibilities of the project in perpetuity. These obligations of the project to maintain facilities for the life of the project or in perpetuity include: relocated diversions of other affected surface water rights holders (e.g. Barker Slough and other Cache Slough intakes proposed to be relocated, surface water diversions on the Sacramento River that are moved or replaced due to the footprint of the intake facilities, maintenance of fish screens that are installed on surface water diversions (CM), and replumbed delta Reclamation Districts that have their water supply and drainage ditches disrupted by BDCP conveyance, tunnel muck disposal and habitat restorations (e.g. Andrus Island). The BDCP has failed to identify, characterize, quantify or disclose these needed covered activities for maintenance of other facilities. The BDCP document is incomplete and deficient. Once these glaring omissions have been rectified, these will be material changes to the document that will warrant it being recirculated for p	
	The BDCP EIR/S states, “This covered activity would also include improvements and routine maintenance of the Fremont Weir and Yolo Bypass…”	Fremont Weir and Yolo bypass are USACE facilities. The BDCP does not have jurisdiction, permission or even a letter of agreement from the USACE authorizing them to modify/improve/maintain these facilities. Since the BDCP does not have authority, jurisdiction or authorization to modify these facilities and seems to have made no material effort to obtain them, the agencies utilizing the EIR/S document to support decision making regarding issuing permits, the EIR/S should not be considered as providing adequate assurances that the BDCP will or even can fulfill its promises. Without consent of the USACE at this stage of the project for these modifications and maintenance activities, the agencies issuing permits should assume that the BDCP will not receive these permissions and therefore any potential contribution to conservation of species for conservation measures related to these facilities should be discounted and attributed with no contribution to species conservation.	
	The BDCP EIR/S states, “This covered activity would also include improvements and routine maintenance of the Fremont Weir and Yolo Bypass…”	The BDCP description of covered activities of these facilities is incomplete, misleading and is inadequate in level of detail to merit issuance of coverage under permits. As an example, the BDCP document does not identify, characterize, quantify or disclose the amount, timing, type, frequency and locations of dredging to maintain the channel approach to the fish ladders from the river and for the channels leading from the bypass to the fish ladders. High flows can regularly erase these channels that are required for fish passage to be functional and dredging could be required on an annual or even more frequent basis. Dredging is a high impact activity and the BDCP provides no detailed description of these activities sufficient to allow any meaningful analysis or disclosure. Further, the BDCP provides no measures to avoid, minimize, or mitigate the significant impacts that always occur with dredging of any level of scope. The BDCP EIR/S is incomplete in its analysis and disclosure, is deficient and requires this additional analysis, should be recirculated after this analysis is completed and should not be provided with coverage of these activities without the additional level of	

	The 75940 Federal Register / Vol. 78, No. 240 / Friday, December 13, 2013 states that the covered activities are only "in the Sacramento-San Joaquin Delta (Delta) and vicinity."	Either the BDCP covered activities are only in the Sacramento-San Joaquin Delta (Delta) and vicinity or the BDCP is in direct conflict with the Federal Register Notice. The CVP/SWP conveyance and facilities in the San Joaquin Valley, Central Coast, South Sierra Foothills and Tehachapi's and south cannot be considered in the vicinity of the delta and therefore the proposed covered BDCP activities do not address the maintenance and operations in these areas. Without coverage for operations and maintenance activities in these areas, the BDCP will still be in violation of the permitting requirements for the project. The lead and responsible agencies should not issue permits for the CVP/SWP for operations and maintenance in these service areas that are specifically excluded in the covered activities area according to the Federal Register Notice.	
	The 75940 Federal Register / Vol. 78, No. 240 / Friday, December 13, 2013 states that "take authorization of covered listed species would be effective at the time of permit issuance."	Since no actions by the project to conserve or restore the species will have been implemented at the time of permit issuance, what is the justification for NMFS and FWS to have the species coverage effective as of the permit issuance? It would be more defensible for the agencies to establish performance/project implementation thresholds for the effective ITP coverage. Additionally, DWR and Reclamation have not yet implemented the RPAs that the NMFS and FWS Biological Opinions required in order for the CVP/SWP to avoid jeopardy of listed species. Until those RPAs are implemented, by the BO definition, those species populations remain in jeopardy. An ITP should not be issued until the BO RPAs have been completed and there is sufficient certainty of conservation benefits to the species before the ITP coverage should come into effect.	
	The 75940 Federal Register / Vol. 78, No. 240 / Friday, December 13, 2013 states that, "The Applicants seek 50-year incidental take permits for covered activities within the proposed Plan Area. The Plan Area encompasses the Delta and additional areas in which conservation measures may be implemented pursuant to the Plan."	The Plan Area defined in the EIR/S does not include the CVP/SWP reservoirs or tributaries upstream of the delta, nor does the document address any impacts of the CVP/SWP that are currently occurring in these areas or would result from the proposed project or alternatives. As a result of the exclusion of these geographic areas from the EIR/S and impact analyses, the ITPs and any other permits issued to the BDCP cannot be not inclusive of the reservoirs and upstream tributaries.	
	There is insufficient information on the design, function, size, location, timing, sequence of implementation and combinations of habitat restoration actions to evaluate the effects on species even at a programmatic level.	As an example of the deficiency of the description of the proposed aquatic habitat restorations, the current descriptions do not identify and are insufficient to determine if the aquatic habitat restorations would be sediment sinks or sources. This is an important water quality impact factor, so without this necessary level of detail, the potential impact of the proposed aquatic habitat restorations cannot be determined. There are additional deficiencies in the description of the aquatic habitat restorations that do not describe the depth of water and rates circulation. This information is required to evaluate if the aquatic habitat restorations would promote mercury methylization impacts. Since these questions can't be determined, even at a programmatic level based on the level of description of the habitat restoration measures, the agencies cannot justify issuing permits on the BDCP project or credit these habitat restorations with contributions to conservation.	

	Aquatic habitat restoration plan level of detail is insufficient to allow any meaningful analysis of environmental effects or understanding of interactions of these actions with the CVP/SWP operations.	The BDCP does not describe or disclose the proposed aquatic habitat characteristics in a level of detail sufficient to support the evaluation of the nature and magnitude of impacts from these actions. The BDCP description of these actions does not disclose water depth, substrate, in-situ and mobilized contaminants, channel complexity, turbidity, food base, hydraulic characteristics of tidal interchange, time requirements for habitat functionality to develop after implementation (habitats are not immediately functional and channel and vegetation equilibrium will not be reached for years or even decades), and hydraulic complexity development. Without these specific descriptions of the proposed aquatic habitat restorations, there cannot be an appropriate evaluation of methylization of Hg, turbidity, DO, concentration of salts and other water quality constituents from evaporation and transpiration, habitat type and quality, contribution to species conservation, and other water quality impacts. The BDCP description of the proposed aquatic habitat restorations and their analysis of them are deficient and are insufficient to support issuance of incidental take permits.	
	Habitat restorations proposed in the BDCP as part of the project are being analyzed in separate environmental documents from the BDCP EIR/S.	Dutch Slough and McCormick/Williamson Tract are both habitat restorations proposed for near-term habitat restoration as part of the BDCP, but those project environmental impacts are being evaluated in separate documents. This separation of project components for separate environmental analysis is piece-mealing which is illegal. If these restoration actions are to be included in the BDCP, the other environmental documents should be incorporated in their entirety into the BDCP EIR/S and their impacts integrated with the impacts of the rest of the BDCP proposed project. Other near-term habitat restorations should also be included in the BDCP EIR/S at a project level of analysis and not carried forward in separate environmental document/planning processes in order to avoid additional piece-mealing.	
	The timing, sequence and combination of potential habitat restoration has been left too vague to be functional to determine impacts or benefits to specific species.	As an example, if all of the intertidal habitat restoration were to occur in the Cache Slough complex all at one time, it would have a very different impact on water quality and value to specific species than if the same amount of intertidal habitat was implemented in the eastern delta. In order for an adequate evaluation of the impacts of the proposed project aquatic habitat restorations, to characterize the effects on and interactions with those restorations on CVP/SWP operations and determine the temporal distribution of contributions to conservation by species, the BDCP EIR/S document is deficient, should be revised to include and analyze this level of detail and should be recirculated after these material changes have been made.	
	ITPs should be issued with specific expectations about the timing, magnitude, location and characteristics of habitat restorations.	If the implementation of the project does not conform to the scenario of habitat restoration that was analyzed and the impacts disclosed for, then the agencies would not be justified in the issuance of take permits.	
	The ITPs should not be effective until a targeted amount of species conservation and recovery have been implemented and the function and contribution to recovery verified through monitoring and evaluation of the project.	A commitment by the BDCP does nothing to actually benefit the species until the related actions are implemented and verified as successful in contributing at their planned level of contribution to conservation of the proposed covered species. the OCAP BO RPA's for the CVP/SWP (not yet implemented by DWR and Reclamation) are designed to avoid jeopardy for the current CVP/SWP project and operations. Until the BDCP delivers the actual planned conservation benefits to the proposed covered species, there is no justification for the agencies issuing ITPs.	

Adaptive Management	The Biological Goals and Objectives are not specific enough to support the use of adaptive management and there are no specific quantitative threshold condition triggers for adaptive management changes.	The BDCP proposes goals for various conservation measures and monitoring programs, but there are no meaningful or functional triggers for adaptive management either to end a program, modify a program or escalate a program. The goals the BDCP proposes, such as juvenile salmonid escapement improvements or improvements in reduction of predation related to the south delta operations are levels of improvement and survival that are not practical to monitor at a level of accuracy that is scientifically defensible. There is not a single study that has ever been published on juvenile escapement survival that is statistically defensible to a population or survival rate within a margin of error of plus or minus 10% or less. Yet BDCP goals and adaptive management program criteria are proposed for levels of improvement that are less than this - see following comment. These BDCP adaptive management proposals are unimplementable at the level of detail, resolution and statistical defensibility. The BDCP should revise their conservation measure goals and adaptive management triggers such that they are practicably monitorable in a statistically defensible and accurate manner s	
	Methods proposed to measure habitat and species population conditions are not accurate enough to measure the improvements that are set in the biological goals and objectives.	As an example, it is infeasible to measure with a statistically defensible reliability, a 75% fish survival from salvage operations or a 2% increase in juvenile salmonid escapement.	
	The project is implementing a number of conservation measures simultaneously that are intended to benefit the same species that the project proposes to adaptively manage.	Even if the project could measure the biological performance of these conservation measures, how does it propose to determine which concurrently implemented conservation measures are working and which ones have failed and are not contributing to conservation and recovery? Unless this question can be answered, the BDCP cannot successfully adaptively manage the proposed project actions and therefore the credit attributed to the adaptive management of these actions for contribution to conservation should be discounted and not contribute to the justification for the issuance of ITPs.	
	Adaptive management of conservation actions has been repeatedly identified by the BDCP as a (false) assurance of an conservations measures contribution to conservation.	The potential adaptive management changes to the conservation measures were not sufficiently defined as allow analysis of those contingencies nor did the BDCP EIR/S include an analysis of the impacts of those adaptive management programs. Near term habitat restoration conservation measures are proposed by the BDCP and they seek construction level permits to implement them, but they do not analyze the potential adaptive management impacts of those actions. This means these near-term actions have not been fully analyzed and do not warrant issuance of construction level permits. Since the adaptive management measures are core to the BDCP assurances of achieving contribution to conservation, the adaptive management measures should not be subject to analysis in a subsequent environmental document unless the permits related to implementing the conservation measure are also dependent upon that subsequent environmental document. In order to remedy this deficiency of the current document, the BDCP should provide adequate level of detail of adaptive management measures for these near and mid-term habitat restoration conservation measures an	
	The BDCP proposed project is unclear on if a conservation measure fails to meet objective if the program is terminated or not.	There are environmental impacts from continuing programs and there are losses of benefits from discontinuing programs even if they are only partially successful. The BDCP has not defined how, when, why or any other details regarding the cessation of conservation measures that are purportedly adaptively management. If you cannot even define how, why or when a program would or would not be terminated, how can you claim you are adaptively managing it?	

	The level of detail (and lack thereof) describing potential adaptive management actions and specific triggers (and lack thereof) for adaptive management implementation do not provide a sufficient level of certainty sufficient to support permitting.	The BDCP proposed project does make it possible for them to cancel many of the proposed conservation measures even though they failed to provide clear triggers for this. With the possible cancelation of so many of the proposed conservation measures the agencies must evaluate how much contribution to recovery would remain for each proposed covered species if the BDCP were to terminating all of the conservation measures that the plan would allow them to do. If they were to cancel all of the conservation measures the BDCP proposed project allows them to there would be little remaining to contribute to species conservation and no justification for the agencies to issue ITPs. Since this is a possible or even likely outcome given the uncertainties of the performance of the proposed conservation measures and the limitations to the accuracies of the proposed performance monitoring methods, the agencies cannot be justified in issuing the ITPs.	
No Action Alt	The BDCP EIR/S Executive Summary states, page ES 25 that "Because the BDCP No Action Alternative assumptions are consistent with the requirements and limitations prescribed by CEQA, the No Action Alternative also represents the No Project Alternative."	The baseline timeframes of the No Action and No Project are not the same and require different assumptions regarding what the CVP/SWP operational commitments and requirements and climate change. Plans and programs which do not exist in the No Project, but are easily and reasonably foreseeable in the No Action condition do have operational and other related environmental affects that interact on the CVP/SWP operations and with the direct, indirect and cumulative impacts of the BDCP Proposed Project. The No Project definition should contain all existing operating commitments of the CVP/SWP and all other approved and reasonably foreseeable plans, programs and policies at the time of the issuance of the Notice of Preparation (2009) and should not include climate change assumptions. The "future" No Action incorporates all of the assumptions of the No Project plus additional conditions that can be anticipated at the future date(s) which would include implementation of additional plans, projects and policies; climate change; and conditions, e.g. future drawdown of groundwater in CVP/SWP service areas and future groundwater quality in CVP/SWP s	
	The interim period definitions of the No Action are incorrect and inadequate to appropriately identify and disclose the impacts of the BDCP Proposed Project and alternatives.	The BDCP project goes through several distinct phases of implementation and therefore has environmental affects that change significantly during the implementation period of the Proposed Project. There is an initial period of the proposed project where it has proposed some limited scope habitat restorations and will be destroying and disturbing habitat in the construction of the conveyance facilities. These impacts should be considered the first near-term analytical milestone in the project as it appears likely that the BDCP project will result in a net negative affect on species during this period. The Proposed Project (HCP/NCCP) should never result in a condition that is a net negative on the species it is supposed to protect and restore or the incidental take permits should not be issued to the BDCP. The initiation of operations of the conveyance would be the next appropriate analytical milestone for analysis and next date a No Action definition should be established. This second No Action interim period would isolate the impacts of implementing the proposed conveyance operations. By isolating the implementation of the proposed operations from the near-term and mid-term p	

	Habitat restoration actions that are part of the No Action condition are included as Conservation Actions in the BDCP proposed project.	Habitat restoration actions that are required from the 2009 OCAP BOs are included in the description and scope of the Proposed Project Conservation Measures. Almost 5 years after the Reasonable and Prudent Actions (RPAs) of the OCAP BOs became the law, DWR and Reclamation have made no tangible progress at all in implementing these measures - see related comments. The BDCP has correctly included some of the RPAs into their No Action definition, but left other RPAs out, e.g. reoperate Shasta flood reserve and fish passage at all dams - see related comments. The BDCP definition of their conservation measures includes the scope of some of the RPAs, e.g. CM2 and CM5. The scopes of these conservation measures are inclusive of the requirements of the RPAs, but are not the same as the RPAs. The BDCP has muddied the comparison of the Proposed Project to the No Action by incorporating No Action restorations into the Proposed Project. To make a clean and appropriate comparison, the BDCP should have excluded the RPAs from their Proposed Project. The BDCP should have made a category of "Current Project Obligations Not Yet Implemented". This way the N	
	comment continued…	The smelt will not benefit from the shallow water rearing habitat because it is too shallow to be suitable for smelt habitat and does not generate food base for them. The smelt would incur an net negative impact from this example habitat restoration from the increased predator pressure. This example is a very real risk associated with the Yolo Bypass and Cache Slough restoration actions proposed by the BDCP as some of the highest populations of smelt have been observed in this geographic area under the current (un-BDCP restored) conditions. When aquatic habitat is first inundated, as in when a aquatic habitat restoration is first implemented, there is a net negative on fisheries conditions. This phenomenon is well documented with levee breaks and flooding of islands. The amount of potential habitat is increased with the initial inundation, but the habitat functioning has not occurred (no local food base generation, broken food chains) and water quality conditions are very poor (high turbidity, dissolved oxygen sags or crashes, mobilized contaminants, etc.). Fish that are sucked into the new inundated area are subjected to reduced quality of habitat and reduced food ba	

	The BDCP Proposed Project/Action includes some actions that are part of the No Action condition but that have not yet been implemented in the No Action nor do those actions have coverage by any other previous environmental document or analysis.	By including No Action/Project elements into the BDCP Proposed Project/Action (e.g. CM2 and CM5), the BDCP has muddied the clarity and the purpose of a comparative environmental analysis to isolate and disclose the impacts of implementing proposed project actions. The BDCP Proposed Project (alt 4) and alternatives CM2 incorporates 8,000 acres of aquatic habitat restoration that are mandated by the OCAP Biological Opinion from 2009. In the example of CM2, the BDCP No Action/Project should have included the 8,000 acres of aquatic habitat restoration in the No Action and proposed and described any additional habitat restoration in the proposed project as separate and in addition to those 8,000 acres. The same goes for the misrepresentation of the No Action component of CM5. DWR and Reclamation have abused their agency discretion by combining unimplemented No Action/No Project condition actions with the BDCP Proposed Project and alternatives.	
	The BCDP is proposing that the unimplemented actions from the 2009 FWS and NMFS OCAP BOs, which are part of the No Action condition, are covered by this EIR/S document sufficient to support issuance of related permits for construction and maintenance of these facilities and habitat restorations.	The covered activities described in the BDCP EIR/S include implementation and maintenance activities for actions that are included in the No Action condition. The BDCP is seeking coverage for these activities because these actions are not covered by any existing environmental document impact analysis or by existing permits. The problem with the approach taken by the BDCP on this is that the BDCP has not proposed any avoidance, minimization or mitigation measures for the significant impacts associated with implementing these actions. As an example, fish passage at Fremont Weir, a 2009 OCAP BO RPA, is included in the BDCP proposed CM2. Construction of the fish passage and periodic dredging maintenance of fish passage channels (see related comment) have significant impacts which the BDCP has not proposed any avoidance, minimization or mitigation measures to address. There are many other examples of unimplemented No Action actions that are incorporated into the Proposed Project that have significant impacts which the BDCP has not proposed avoidance, minimization and mitigation measures for.	
	Reclamation is developing an EIS to address the environmental impacts of the CVP from the Remand of the 2009 OCAP BOs, but DWR has not provided any notice that it intends to do a similar EIR analysis of the SWP impacts.	Reclamation is conducting the Remand EIS due to a court order that was issued almost 2 years ago. The CVP and SWP operations are coordinated, so the court orders to modify CVP/SWP operations and the environmental impacts of these actions apply equally to the SWP operations. DWR needs to develop an equivalent EIR to address the Remand on the SWP operations and impacts. DWR and Reclamation should address the impacts of implementing the 2009 OCAP BO RPAs in these documents so that the impacts of implementing these actions can be clearly defined for the BDCP No Action and that appropriate avoidance, minimization and mitigation measures can be developed to address the significant impacts of these actions. With this approach (and by complying with the court order to conduct the environmental analysis in a timely manner) the BDCP can clean up the No Action baseline/Proposed Project conflicts that were identified in the preceding two comments. The Remand EIS and EIR documents should be completed prior to the recirculation of the BDCP EIR/S.	
	Judge Wanger's Remand on the OCAP BOs has modified the Fall X2 and reverse flow criteria on Old and Middle Rivers but it did not set aside the other existing DWR RPA obligations from those BOs.	There is no evidence that DWR or Reclamation has engaged in any good faith efforts to comply with the existing OCAP BO RPA project requirements. The OCAP BO RPAs are existing obligations of the SWP and CVP and are part of the baseline condition of the BDCP. Some of the RPAs have operational implications (e.g. tributary flows, reservoir cold water pool availability and delta water quality), but the BOs do not contain sufficient specificity of the design and operational characteristics of the RPAs for these baseline conditions to be accurately modeled. DWR and Reclamation's missed deadlines in fulfilling their current BO baseline obligations by applying a best faith effort to develop and implement them are compromising the baseline modeling assumptions of the BDCP. The BDCP only analyzed the OCAP BO RPA aquatic habitat restoration actions at a programmatic level of detail when if DWR and Reclamation had not missed their deadlines for developing project level descriptions per the BO, the BDCP would not be analyzing these actions at an insufficient level of detail. and so that the BDCP baseline modeling assumptions are not fundamentally flawed and/or immediately obs	

	DWR and Reclamation should make every effort to comply with the existing OCAP BO RPA requirements so that they are in compliance with the law as it stands and so that the species are protected in the interim period until other potential conservation actions are developed and implemented.	DWR and Reclamation waiting for the BDCP to be approved and implemented is not an acceptable excuse for not complying with the law. Once the OCAP BO RPAs are implemented, DWR and Reclamation (as well as NMFS and FWS) should monitor the level of protection and conservation achieved. Once the results of these actions are understood (after at least several years of monitoring), these learning's can be utilized to develop and propose a refined BDCP program if that program is even needed to conserve the fish species at that point. Proposing the BDCP project with such large impacts before even implementing mandated conservation actions from the OCAP BO RPAs and seeing what level of conservation actions would achieve does not stand the test of reason and is irresponsible and indefensible action on the agencies part. Until the current obligations of the CVP/SWP to protect species are fulfilled, the BDCP project should not be approved or issued incidental take permits.	
	The BDCP must have multiple baselines so that the impacts of the proposed project can be fully disclosed.	The first baseline should be the No Action Alternative without the BO RPAs and the second would be a No Action Alternative with the BO RPAs. These baselines should be compared to each other so that the impacts of implementing the BO RPAs can be isolated and disclosed. No other environmental document has been released to the public to date that evaluates the impacts of the changes in operations from the BO RPAs on the CVP and SWP and therefore, the disclosure of impacts as the BDCP has currently defined their No Action scenario (with some RPAs included and some excluded) has not be evaluated or disclosed.	
Project Alternatives	The BDCP has selected Alternative 4 as their preferred project even though it has significantly more adverse, significant and significant unavoidable impacts after mitigation than most of the other project alternatives, including and specifically the No Action alternative.	See comments on the executive summary impact table. The No Action has significantly less impacts than the proposed project (alt 4) or any other alternative proposed by the BDCP. Because it has the least impacts of all alternatives, the No Action must be selected as the LEDPA.	
	According to the draft analysis Alternative 3 passed the alternatives development screening process and therefore has been qualified by the BDCP as sufficiently meeting the purpose and needs identified for the project.	If the No Action Alternative is not selected as the LEDPA because it does not "reasonably" meet of the project objectives and needs identified in chapter 2, then according to the draft anlaysis Alternative 3 must be selected as the LEDPA. According to the draft analysis Alternative 3 has significantly less impacts than alternative 4 and other alternatives which were given full analysis in the document. According to the draft analysis Alt 3 reasonably met the project needs and therefore if not the No Action, then according to the draft analysis Alt 3 must be selected as the LEDPA.	
	The 404, 408 and 401 permit processes will require the BDCP to implement the Least Environmentally Damaging Project Alternative (LEDPA) even if that is a different alternative than the Proposed Project.	The EIR/S does not support the information needs of the 401, 408 or 404 permitting process because it does not identify the LEDPA alternative. As pointed out in previous comments, according to the draft analysis the No Action or Alt 3 must be selected as the LEDPA. The EIR/S must be revised to include a LEDPA analysis, or the USACE and/or EPA must produce a subsequent EIS to support this required analysis.	
	According to the draft analysis Alternative 3 passed the alternatives development screening process and therefore has been qualified by the BDCP as sufficiently meeting the purpose and needs identified for the project.	According to the BDCP EIR/S impact summary table in the executive summary, alternative 3 has significantly less impacts than the Proposed Project and other project alternatives. According to the draft analysis since Alternative 3 meets the project objectives (otherwise it would not have been included as an alternative in the EIR/S for full analysis) and alternative 3 has the least environmental impacts of the alternatives considered, then alternative 3 must be the Least Environmentally Damaging Alternative (LEDPA). If the EIR/S is approved by the lead, responsible and coordinating agencies and the project moves forward to seek permits for construction and operations, then the EPA and USACE can only issue permits on the LEDPA alternative (alternative 3).	

	According to the draft analysis since Alt 3 met the screening criteria and reasonably met the purpose and need for the project and would be LEDPA in comparison to the Proposed Project, the BDCP alternatives development process should have considered capacities lower than alternative 3 that would still meet reasonably the project purposes.	Since the LEDPA is the lowest capacity alternative evaluated, the BDCP needs to analyze increments of capacity lower than alternative 3 so that the alternative that still reasonably meets the project purpose and need that is the true LEDPA is included for analysis in the EIR/S document. Without a full analysis of an alternative that has a lower capacity that turns out to have higher impacts than the other alternative capacities, the EIR/S is clearly deficient. The BDCP should have also provided rationale and disclosed what the lowest capacity would be that would qualify as reasonably meeting the project purpose and needs.	
	The BDCP only analyzed one type and size of intake for the alternatives which contained north delta diversions.	The BDCP EIR/S document is deficient because it did not consider permutations of the alternatives that evaluated alternative key components of the project. The impacts of in-river and on-bank intakes are different for different species and the EIR/S failed to evaluate those permutations of the alternatives. Alternative different sizes of intakes were also not evaluated. All of the north of delta intake alternatives utilized 3,000 cfs on-bank intakes. The larger size intakes have different affects for different species than smaller intakes. The BDCP alternatives should have included permutations of more smaller intakes than just the 3,000 cfs intakes. If two alternatives that were otherwise identical, save for the intake type and size, had been analyzed, then the impacts and benefits of these fundamental design components of the proposed conveyance could have been appropriately considered, analyzed, isolated and characterized, evaluated and disclosed. Without analysis and disclosure of these critical proposed project design features, the BDCP	
Conveyance facilities	The through delta conveyance alternative and dual (north and south delta) operations did not include a full range of south delta modification options. An EIR is required to include an in-depth discussion of those alternatives identified as at least potentially feasible. (Preservation Action Council v. City of San Jose (2006) 141 Cal.App.4th 1336,1350-1351; Citizens of Goleta Valley v. Bd. of Supervisors (1990) 52 Cal.3d 553, 569.)	Designs for an isolated Clifton Court Forebay have been discussed many times by DWR and through the CALFED project, but these concepts discussed in the BDCP scoping process were not provided adequate consideration for inclusion in BDCP alternatives. Isolation of Clifton Court Forebay would reduce the magnitude of impacts on fisheries from south delta operations. Following is a description of an isolated Clifton Court Forebay facility that have been previously discussed and proposed. Move the trash racks of the intake at Clifton Court to outside of the Clifton Court operable gate. The trash racks will intercept debris coming in with the diversion water and serve as a behavioral deterrent to the fish to stay in the main channel as much as possible. Behind the trash racks would be a fish screen designed to keep larger size fish out of the isolated facility. This initial screen outside of Clifton Court Forebay should only pass smelt and juvenile salmonids. This screen would significantly reduce the exposure of juvenile salmonids and delta smelt to predation. The Clifton Court Forebay would be segmented by a new levee that would draw water from the outside channel di	

	comment continued…	In order to achieve appropriate sweeping velocities at the criteria screen if the SWP was diverting 3,000 cfs, that the salvage pumps would be pulling and recycling 10,000 cfs. The fish salvage screens would need to be redesigned and larger to deal with the larger flows and fish handling, storage and release operations would need to be revamped as has been previously recommended in many previous meetings, projects and communications. Predation would be further reduced in the salvage process because captured juvenile salmonids and smelt would not be stored, shipped and released with predator sized fish. The 10,000 cfs that was screened and fish free would be discharged into the portion of the Clifton Court Forebay that is on the other side of the new conveyance channel. The discharged water re-enters the new conveyance channel through debris and fish screens that are installed in the north and east side of the conveyance channel levee. This recirculates the screened water through the conveyance channel and keeps all of the non-conveyance part of Clifton Court fish free. The recycled water also speeds the transit of the juvenile fish and smelt down the c	
	The BDCP did not provide sufficient justification for the proposed conveyance facilities locations.	Facilities location rationale and supporting documentation must provide rationale for why a facility that is condemning private lands must be cited in one location over another – this documentation and rationale has not been adequately done for the intake citing or canals/pipelines. Even a cursory review of the BDCP proposed north delta intake locations shows that historic buildings (e.g. Rosebud Mansion) and recreation areas (Merritt Landing) are directly affected by intake locations that could easily be shifted to avoid these impacts. Without sufficient justification for the location of the facilities and their lack of investigated alternatives to avoid and minimize impacts, the BDCP project should not be granted public condemnation of private properties.	
	The BDCP EIR/S document says, “The intake locations listed represent those locations selected for the analysis of each BDCP alternative. Based on the results of an October 2011 workshop on the Phased Construction of North Delta Intake Facilities (see Appendix 3F, Intake Location Analysis), different combinations of intakes could be constructed under these alternatives. Once an alternative is selected as part of the final BDCP, a decision regarding intake locations will be made. “	If different intakes are selected from the configuration that was analyzed in the EIS/EIR, then the document will need to prove that the tidal interactions and localized hydraulic affects are the same or less than what was analyzed or the models and analysis will have to be rerun so that the effects of the project are fully and appropriately disclosed. If the BDCP does select different intake locations or combinations of locations, or types and/or sizes of intakes that the configuration analyzed in the draft EIR/S, this will be a material change in the project that will require recirculation of the document for another public draft review.	

	The facility footprint of disturbance and other impacts (i.e. air quality) were not scaled to the various sizes of conveyance.	The BDCP EIR/S impact analyses does not make clear the difference in magnitude of impacts from the various size/scale of facilities that are associated with different conveyance capacities and different conveyance designs. As an example, the footprint of disturbance for a 3,000 cfs set of tunnels is clearly smaller in magnitude than the footprint of disturbance for a 15,000 cfs tunnel. In the respective impact analyses, the magnitude of the difference in the impacts from the differing project footprint and operations was not adequately characterized and disclosed. The magnitude of these impacts is essential to characterize to correctly identify the LEDPA. As an example, both a 15,000 cfs and 3,000 cfs tunnel may both have Less-Than-Significant impacts to a resource, yet the project has not disclosed or properly characterized that in absolute magnitude the 3,000 cfs facility would have half of the impact on that resource as the 15,000 cfs facility. The BDCP impact analyses should be rewritten to more fully disclose the magnitude of impacts on the resources in comparison to each other in addition to the No Action and No Project.	
Conveyance operations	The Central Valley Project Improvement Act (CVPIA) included an analysis of the amount of water that is required to be delivered to protect health and human safety. The BDCP failed to consider this water delivery amount as a benchmark water delivery quantity to determine reliability.	When evaluating the proposed project, alternatives and no action scenarios of the BDCP, the EIR/S failed to include a critical impact criteria, which is, "How often does the project or alternatives fail to meet water deliveries to protect human health and safety?" This is the most fundamental criteria for reliability of the project and yet the EIR/S failed to analyze it.	
	Many types of project diversion operations were discussed in scoping and the project description development, including "Sip vs. Gulp", distributed intakes, and in-delta storage (e.g. Sacramento Deep Water Ship Channel).	Steering Committee meetings included presentations on Sip vs. Gulp seasonal diversion operations (presentations and comments made by Jason Peltier and others) for the proposed project operations development and there were EIR/S scoping comments which addressed Sip vs. Gulp operations. A seasonal "gulp" operational strategy is important to the viability of the downstream storage alternative. Distributed intakes (north, south, east, central and west intake locations) and in-delta storage were also discussed during EIR/S alternatives scoping meetings. None of these alternatives concepts were addressed in the alternatives screening and development process and none of these concepts were represented in any of the alternatives analyzed in the EIR/S. The BDCP dismissed these alternative concepts without due consideration or application of consistent or defensible screening criteria. The BDCP must revisit these concepts that were submitted during the public scoping process, give them due consideration and full analysis as alternatives or components of alternatives in the EIR/S.	

Conservation Measures	The BDCP will not fulfill their commitment to "restore 19,150 acres of tidal natural communities by year 10 of the project" (CM4).	The EIR/S says that habitat restorations that occur after the near-term will be analyzed at a programmatic level of detail and will be subject to more detailed analysis in subsequent environmental document(s). No specific timeframe for these subsequent environmental documents is provided in the EIR/S. CM4 lacks detailed designs (necessary for surface water flood channel capacity analysis and flood risk assessment, aesthetics - see related comments); footprint of disturbance (necessary for terrestrial species, fish stranding and agricultural impacts - see related comments); operational plans (necessary for operations modeling, water supply impacts, water quality impacts, agricultural impacts - see related comments); Maintenance plans (dredging impacts on water quality and fisheries habitat); water rights (evaporation, transpiration and groundwater recharge consumption) have not been secured or the process to secure them defined and analyzed (necessary for water rights impacts - see related comments); the change in beneficial uses of water of those water rights has not been identified or evaluated (necessary for water rights and water supply impacts - see rela	
	comment continued…	Given the BDCP process to date (7+ years and the project just released the first public draft), it would be exceedingly unlikely that the BDCP could complete a subsequent document in less than 5 years after the BDCP project was approved. Then there would be another two years of detailed design, contracting, permitting, etc. Allow at least 2 years for construction as there are seasonal constraints to construction of these CMs (e.g. smelt, Chinook salmon, sturgeon avoidance and minimization measures only allow in water construction periods from about May through August and terrestrial Greater Sandhill crane presence prohibits work during other times of the year). This means the earliest construction could be completed on CM4 using a subsequent environmental document would be in year 10 after BDCP approval. Note that the commitment of the BDCP is that the 19,150 acres would be "restored" by year 10 (the plan does not say "implemented by year 10"). Tidal natural communities, such as described in CM4, do not magically start to provide habitat values just because water was added to a parcel of land. Water quality needs time to come into equilibrium, plant com	

	There are not different versions of conservation measures for different objectives. E.g. Prospect Island could be designed as foraging/food production rearing habitat for salmonids or for delta smelt. These two different habitat objectives and resulting habitat designs are incompatible and very different in terms of water depth, substrate, water quality (e.g. turbidity), sediment sink vs. source, location and size of levee breaches, intertidal hydraulic exchange volumes, etc.	The BDCP has not defined which habitat restorations will be designed to benefit which species (or any specific habitat restoration plans at all), so an evaluation of project impacts and the level of contribution to conservation of species is impossible and therefore the BDCP EIR/S document is deficient.	
	Natural resource agencies don't have funding identified or authorization for the habitat restoration component of the project costs.	The habitat restorations are the majority contributor to the conservation of the species that would justify the take permits that are the objective of the project and allow the SWP to operate. The beneficiaries of the project, the SWP water contractors, should have to pay for the habitat restoration project, not the general public through the public trust resource agencies.	
	The conveyance does not reduce take of species or restore habitat, therefore it should not be classified as a conservation measure.	Since different entities are funding habitat restoration from the conveyance construction and operations, then the habitat restoration should be considered a separate project from the conveyance. If the conveyance does not demonstrate a net beneficial impact in an environmental analysis of that project component by itself, then the project should have to pay for the appropriate mitigations and habitat restorations such that it justifies the desired take permits. Those mitigations and habitat restorations to achieve a condition that is permitable by the agencies should be paid for solely by the proponents and beneficiaries of the project.	
	The BDCP has not proposed any different combinations and sequences of habitat restoration or analyzed and disclosed any evaluations conducted which demonstrate that the habitat restoration-related impact analysis would be representative of any impacts of project implementation other than exactly the scenario analyzed in the proposed project and alternatives.	Since the BDCP did not propose or analyze any permutations of the development, sequence and combinations of habitat restorations, then permits can only be issued on exactly the scenario that was analyzed in the EIR/S. Any BDCP habitat restoration implementation deviation from the scenario analyzed in the EIR/S would then fall outside of the boundaries defined in the analysis and therefore would be outside of the coverage of the permit that was based on that analysis.	
	If the BDCP wants a programmatic-level of analysis flexibility to implement the aquatic habitat restorations in a variety of timing, combination and designs, then they need to do a series of sensitivity analyses sufficient to "book end" the range of effects and disclose those in this document.	The BDCP has not done the sensitivity analyses that would be required to defensibly define the book end worst case scenarios, so there should be not be a programmatic level of flexibility given to the BDCP in their implementation. Further, the interactions of the habitat restorations and their undefined location, magnitude, design characteristics and implementation timing and combinations directly affect water quality and therefore CVP/SWP operations. Without knowing how, when or where the aquatic habitat restorations are, there cannot be a project level analysis of the propose project operations so construction permits for the construction of the conveyance should not be issued based on the analyses in the draft EIR/S document. If these analyses are revised and a sensitivity analysis of the habitat restorations is conducted, then this would be a material change in the document that would warrant recirculation.	

	"Habitat restoration, creation, enhancement, and management activities These activities include all actions that may be undertaken to implement the physical habitat conservation measures. These activities include all actions that may be undertaken to implement the physical habitat conservation measures."	The lack of specificity of activities covered under this action is unfunctional and cannot be reasonably analyzed even at a programmatic level without greater specificity. The EIR/S must add a list of the specific actions to be covered and include those in the analysis and disclosure of impacts.	
	The 75940 Federal Register / Vol. 78, No. 240 / Friday, December 13, 2013 states that, "Reclamation may also make decisions regarding... implementing habitat restoration and monitoring actions proposed by the BDCP that are consistent with Reclamation's regulatory requirements, programs, authorities, and appropriations. This Federal Notice statement unclear and implies that the actions Reclamation may take may or may not be the same as the BDCP."	The Purpose and Need and alternatives of the EIR/S does not address potential variations in the level of Reclamation's participation in the habitat restorations.	
	Does BDCP EIR/S document says, "lands acquired for restoration or enhancement in the south Delta would not be located alongside corridors designated for water supply."	What is the rationale for this exclusion? Is it due concern that adjacent inundated habitat restorations would compromise the structural integrity of the through delta conveyance levees? If so, then what about the other delta levees that would be affected by aquatic habitat restorations? The document fails to disclose the implications of this habitat restoration land acquisition and geographic distribution constraint.	
Yolo Bypass and seasonal floodplain inundation	Yolo Bypass conservation measure diversion operations and inundation were not defined sufficiently such that they could be incorporated in modeling and the surface water impact analyses.	The BDCP lack of definition of Yolo Bypass conservation flow rules for how much, when and under what conditions supplemental inundating flows would be released by the BDCP into the bypass. Without the conservation details on how much, when, for how long and under what conditions bypass flows would be augmented, there is not sufficient detail to include this CM in modeling (water supply, surface water and water quality impacts) or in land use impact analysis (agriculture and recreation). Yolo bypass operations were not defined sufficient to include in CALSIM modeling assumptions and CALSIM II has an inadequate analytical output temporal resolution to be of sufficient detail to evaluate the impacts of Yolo Bypass diversion flows. Timing, duration and magnitude of BDCP Yolo Bypass inundation flows are required in order for impacts on agriculture need to be defined enough to evaluate the magnitude, frequency, duration and geographic extent of impacts. Until the BDCP provides the detailed operating rules for the Yolo Bypass conservation measure inundation operations, the BDCP EIR/S impact analysis will remain incomplete and deficient with undisclosed im	

Conservation Measure Implementation Schedule	All of the BDCP proposed near-term habitat restoration conservation measure actions are actually existing CVP/SWP obligations from the current NMFS and FWS OCAP BO RPAs.	The OCAP BO RPAs for 8,000 acres of intertidal and 17,000 acres of flood plain should not be identified as contributory to species conservation as they are part of the baseline. Since all of the BDCP near-term conservation measures are fulfillment of existing obligations of the CVP/SWP, these actions cannot be considered to contribute to species conservation as compared to the No Action condition. Once the environmental analysis separates the fulfillment of existing obligations from new actions that actually have the potential to contribute to species conservation it becomes clear that the BDCP project does not actually start contributing to species conservation for a number of years. I would be more specific in my comment, but the BDCP has not even committed to a detailed timeline of when the next increments of habitat restoration after the near-term would occur in which these first actions contributing towards conservation would occur nor the type, quantity, location or even target species that are supposed to benefit from these undefined actions. It is clear that the BDCP intends that these restoration actions that would be the first real contributions to conserva	
	The BDCP incorporation of the Solano County Cache Slough diversions as part of the project description creates a growth inducing impact.	The BDCP EIR/S fails to identify and disclose this impact of the proposed project. - also see related comments under Growth Inducement.	
Other Stressors	Many of the BDCP proposed project other stressors conservation measures are actually dependent upon third parties outside of BDCP's control for the CM implementation, administration and success.	The BDCP's proposed project contributions to conservation for these other stressor measures are reliant upon other agencies to implement them. Even the very existence of these third party agencies responsible for implementing these other stressor CMs is uncertain in a 50 year timeframe and the BDCP has no power to even influence if the implementing agencies will exist in 50 years. Additionally, the BDCP has no control over the quality or completeness of implementation of these conservation measures by other agencies and agents. BDCP does not have any assurances or management measures to ensure that funding provided by BDCP to implement these programs will actually be spent on implementing these programs in a manner or scope as promised by the BDCP. Examples of some of the other stressor conservation measures which rely upon third parties for their success include: Egeria removal, changes to striped bass stocking, fish screens on surface water diversions in the delta, predator fish removal, changes to fishing rules, changes to enforcement of current laws to reduce poaching and over limits, integrated pest management education, no spray zone en	
	At least one of the proposed project other stressor conservation measures is illegal.	It is not legal under California fish and Game code to issue fishing bounties to remove predator species. DWR explored this conservation measure in its Oroville Facilities FERC Relicensing and it is well documented that this type of program is not legal. Additionally, most if not all published literature on programs to remove predators have proven unsuccessful at reducing predation rates and monitoring efforts to quantify the success of predation reduction programs have all been inadequate to provide any statistically defensible reduction in predation rates.	

	Some of the CMs proposed by the BDCP are outside of the jurisdiction of the project to implement.	BDCP proposed modification of Fremont Weir and Sacramento Weir are outside of their jurisdiction as these facilities are owned, operated and maintained by the USACE. The BDCP has provided no proof that they have received permission from the USACE for any modification of these facilities. Lisbon Weir is owned and operated by a private water district, so the BDCP has no jurisdiction to implement actions to modify these facilities either. Unless the USACE provides a letter of concurrence and agreement with the BDCP for these BDCP proposed modifications, the agencies utilizing the EIR/S document to support decisions making should discount any potential contribution to conservation these CMs were purported to contribute.	
	The Other Stressor conservation measures are not described in sufficient detail to allow appropriate environmental analysis to support permitting.	As an example, the program for Egeria removal does not describe the time of year, location, equipment used, methods, practices, operational guidelines or any real substance as to how the program will be implemented. Without knowing how, where and when the invasive aquatic weed removal program will operate, it is not possible to identify, characterize, quantify or disclose the types of impacts that would occur from implementing the program. Listed GGS and salmonids could easily be picked up and killed or significantly disturbed or disrupted as a consequence of this program. This killing and disturbance is "take" that would need to be evaluated and disclosed. The BDCP EIR/S document is incomplete and deficient for not completing the detailed analysis of this impact. The BDCP needs to complete this analysis and propose measures to avoid, minimize and mitigate the significant impacts that could occur with the implementation of this program.	
	Methylation of Mercury from BDCP proposed aquatic habitat restorations has not been adequately evaluated in the EIR/S.	Cache Creek is one of the largest if not the largest source for Mercury contamination in the delta. The BDCP has proposed several large scale aquatic habitat restoration programs that are downstream of this large and ongoing Mercury contamination source, including Calhoun Cut, Liberty Island, Little Holland Tract, Prospect Island, Egbert Tract, Hastings Island, Ryer Island, Grand Island, Decker Island, Three Mile Slough, and others. Aquatic habitat restoration conditions can convert mercury into methylated mercury which is much more readily assimilated into the food chain and bioacumulated. The BDCP aquatic habitat restoration conditions have not been described in sufficient detail to determine at what rate the methylation of mercury would occur and the BDCP has failed to identify, characterize, quantify or disclose this significant impact. The BDCP EIR/S needs to provide greater detail on the aquatic habitat restoration water depths, water turnover rates, dissolved oxygen conditions, mercury deposition and mobilization rates and methylization rates. Further, the BDCP has failed to propose avoidance, minimization and mitigation measures to address this significa	
	Avoidance and minimization (CM22) is not a Conservation Measure.	Avoidance and minimization measures are NEPA and CEQA requirements for the EIS and EIR. Avoidance and minimization measures are not contributions to recovery and should not be credited as such.	
Appendixes			

Appendix 1B, page 1, inset box	"South of Delta Water Storage Need Not Be Addressed in BDCP EIR/EIS. For many reasons, increased water storage is neither a legally required component of the BDCP nor a project that must be addressed in the cumulative impact analyses for the EIR/EIS for the BDCP. Increased storage is neither: (1) an aspect of the BDCP itself; (2) a “probable future project” within the meaning of CEQA, (3) a “reasonably foreseeable future action” within the meaning of NEPA, (4) a future phase of the BDCP project within the meaning of either CEQA or NEPA; nor (5) an EIR or EIS alternative to the proposed BDCP. As a result, such additional storage need not be included in the mandatory cumulative impact analysis for the EIR/EIS or in any section focused on alternatives."	This is such a strong declarative paragraph that is prominently highlighted from the BDCP EIR/S and yet several parts of this statement are boldly biased and positional. The quote says, "for many reasons" and then goes on to identify none of them. Increased storage is not part of the applicants proposed BDCP project, but it was identified in the EIR/S scoping as an alternative to meet the project needs and objectives. The statement declares that storage is not an EIR/S alternative and yet the alternatives development chapter never addresses the public scoping submitted alternative of water storage. Water storage would have easily passed the screening criteria if it had been evaluated and it should have been an alternative that was fully analyzed in the EIR/S - see preceding related comments.	
Appendix 1B, page 12, line 11	"Additional internal preliminary studies by DWR in 2010 considered the potential benefits of expanding north of Delta surface storage and expanding groundwater storage south of the Delta in combination with new Delta conveyance. Using theoretical planning assumptions that reflect essentially unlimited groundwater storage capacity (5 MAF), south of Delta water deliveries could be improved by about 100 TAF per year over deliveries with only new Delta conveyance and a 1.8 MAF Sites Reservoir. Based on preliminary BCDP modeling, the addition of 1 MAF of new south of Delta storage (surrogate for surface storage, groundwater storage, or re-management opportunities) could increase Delta water exports by approximately 150 TAF per year."	The BDCP document identifies here that studies have been done that demonstrate that the project needs and objectives identified in the BDCP EIR/S are better met by combining upstream and downstream storage with a BDCP conveyance. This is clear evidence that water storage, both upstream and downstream of the delta should be considered as part of the solution to the needs and objectives identified for the BDCP project. The BDCP should not have arbitrarily and capriciously dismissed water storage concepts from consideration in the alternatives development in the EIR/S.	

3A-5, line 18	"New Storage To Improve Delta Flow, with the focus on changing the timing of flows to benefit all use."	CALFED identified that new storage could be the solution to improved flows in the delta. Improved flows can be used to benefit water supply and environmental quality for the fish species of concern. The new storage identified by CALFED addresses most if not all of the purpose and need and project objectives identified by the BDCP. The BDCP EIR/S process failed to give this identified project alternative due consideration and evaluation. What was the rationale for dismissing this option? A rationale consistent with NEPA and CEQA scoping is not disclosed in the EIR/S that I can find. See related comments on Appendix 1B regarding the fact that the arguments made there are not compliant with NEPA and CEQA requirements and guidance.	
3A-11, line 22	The EIR/S claims that tunnels were identified as a conveyance option in comments received in scoping.	The BDCDP must disclose what comments identified the use of tunnels as a conveyance. We do not believe that tunnels were identified in the public scoping process, so the BDCP is misrepresenting where this conveyance option was identified.	
3A-12, line 28	"Initial Screening Conveyance Alternative C4. Through Delta Conveyance with Fish Screens at Clifton Court Forebay"	This list omits the concepts of distributed intake screens in the central, west and east delta. It is also missing the Sacramento Deep Water Ship Channel use as a part of the conveyance. Why were criteria fish screens identified here and in the CALFED process not carried forward as a component of some of the dual conveyance alternatives? I can find no rationale consistent with NEPA and CEQA requirements and guidance for dismissing this alternative component from further consideration. The EIR/S should revise their alternatives screening process and alternatives to consider those alternative components that were dismissed from further consideration without sufficient and consistently applied supporting rationale that are compliant with NEPA and CEQA requirements.	
3A-11, line 28	"several of the alternatives considered in the initial screening of conveyance alternatives were specifically identified through the scoping process, including the following alternatives. Initial Screening Conveyance Alternative A1. Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes."	Where is the documentation of the source of the scoping suggestion for consideration of the tunnels as a conveyance? A search of the Scoping Report reveled no comments suggesting a tunnel as a conveyance even remotely resembling the Proposed Project. The tunnel as a conveyance was not identified in the NOI or NOP, was it identified during the public scoping period? Who suggested it? If the source documentation for the tunnel conveyance concept that was adopted as the Proposed Project is completely missing from the scoping process then it is not hard to see why other major concepts that were submitted during scoping such as the Sacramento Deep Water Ship Channel and upstream and/or downstream storage were not documented or given due consideration consistent with NEPA and CEQA requirements. The key documentation for the alternatives is missing so the BDCP EIR/s should be rescoped - see related comments on the numerous deficiencies of the public noticing and the NOI and NOP.	
3A-12, line 37	"The requirements of the Water Code Section 85320 from the 2009 Delta Reform Act."	This important second screening criteria identified is not explained. What aspects of the identified document were used and how were they used? Where is the citation so the reader can find this reference?	
3A-14, line 10	"To improve the ecosystem of the Delta by: Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species."	Again, the constraint of the "planning area" is referenced, but not justified or supported with rationale of any kind. See related comments on lack of supporting rationale provided by the EIR/S for the definition and constraint of the "planning area". If one of the core objectives of the project is to improve habitat conditions for covered species, then it is counterproductive to limit where those beneficial actions can occur with an arbitrary and unsupported geographic boundary. No alternative component should have been dismissed from further consideration based on the extent of the "planning area" if it met other reasoned criteria. The use of the planning area as a screening criteria is predecisional. Any concepts that were dismissed from the alternatives screening process for the fact that they were located in whole or in part outside of the planning area should be restored to consideration and fully analyzed in the EIR/S document. The BDCP inconsistently applied the planning area as a screening criteria as it did include some project actions that transcend their arbitrarily defined planning area boundary, e.g. Grizzly Slough habitat restoration, Fremont Weir modifications, tra	

3A-14, line 33	"When there are a very large number of potential alternatives, a reasonable number of alternatives covering the full spectrum of reasonable alternatives can be identified for detailed analyses in the NEPA document."	This is a correct statement, but this is not what the BDCP EIR/S did in the formulation of the alternatives. As stated in other comments, the alternatives analyzed in the EIR/S were evaluations of different conveyance routes but with very little substantive change on all of the other project components such as intake type, intake locations, restoration options, other stressor actions, etc. The BDCP EIR/S alternatives need to be reformulated to provide real different alternatives - upstream and/or downstream storage combined with criteria screens in the south delta, distributed intakes, intakes in other river reaches, other intake types, other types and combinations of habitat restoration, other types and combinations of other stressor actions. The BDCP alternatives provided in the current draft EIR/S provide none of these meaningfully different alternatives. The BDCP EIR/S should be rescoped and reanalyzed to include the full spectrum (as DOI EIS scoping requires) of these meaningfully different alternatives.	
3A-17, line 4	"the following first level screening criteria. Could the potential alternative provide for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species? Could the potential alternative protect, restore, and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems? Could the potential alternative reduce the adverse effects on certain listed species of diverting water by relocating the intakes of the SWP and CVP? Could the potential alternative restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements?"	Here are the first level screening criteria for the development and selection of a water conveyance option from the EIR/S. First, the planning area is mistakenly identified as a part of the criteria - see related comments. Second, the document identifies that the answers to these questions may not be known until there is an analysis more full than conducted in the screening process. In these cases, in order to be thorough and not arbitrary and capricious, the concepts that cannot be reliably and defensibly concluded to not meet this criteria should be carried forward to the next level of screening for further consideration or to full analysis in the EIR/S. The tunnel water conveyance concept obviously got this benefit of a doubt treatment as it was forwarded for full analysis in the EIR/S even though at the screening stage of analysis these questions could not be answered. The full analysis of the tunnel water conveyance, Alt 4 the Proposed Project, in the EIR/S determined that the CM-1 the conveyance itself, did not contribute to species conservation and the EIR/S's assessment on the improvement in water supplies was "no determination". No determination in this case means that even	
	comment continued	Other conveyance options such as upstream and/or downstream storage combined with real fish criteria screens in the South Delta (and the associated ability to change operations to avoid pumping while fish species of concern were present) obviously would be more likely to meet these criteria than the tunnel water conveyance option. Distributed intakes in the west central and east delta provide operational flexibility to avoid diverting water from location where fish species of concern are present. Similarly, use of the Sacramento Deep Water Ship Channel as a portion of the conveyance with the associated water storage in the channel and intakes upstream of the geographic range of the delta smelt would also better meet these criteria than the tunnel water conveyance option. Each of these other conveyance alternatives should have been carried forward for full analysis in the EIR/S based on these screening criteria.	

3A-17, line 4	The criteria are in conflict with each other and embed artificial and unsupported constraints on how the project objectives and needs are met.	The important objective of the project is the first one, to conserve the proposed covered species. The third criteria is not an objective, it is an arbitrary and predecisional constraint that is in conflict with the first criteria. The third criteria is a question that is the same in concept as the first criteria but with an artificial constraint embedded in it. Since the objective clearly is to conserve the species, we should not constrain or use as a criteria something that limits the ways to achieve the primary objective. This screening criteria should be dropped and any alternative water conveyance concepts that were dropped based on the third criteria should be restored to further consideration or full analysis in the EIR/S document.	
3A-18, line 5	The second level screening criteria included: "Would the potential alternative avoid or substantially lessen any of the expected significant environmental effects of the “proposed project”? and "Would the potential alternative “address one or more significant issues” related to the proposed action?"	Consideration of other conveyance options such as upstream and/or downstream storage combined with real fish criteria screens in the South Delta (and the associated ability to change operations to avoid pumping while fish species of concern were present) would be likely to avoid and or lessen impacts as compared to the proposed project/action. Distributed intakes in the west central and east delta could provide operational flexibility to avoid diverting water from location where fish species of concern are present would be likely to avoid and or lessen impacts as compared to the proposed project/action. Similarly, use of the Sacramento Deep Water Ship Channel as a portion of the conveyance with the associated water storage in the channel and intakes upstream of the geographic range of the delta smelt could also better meet these criteria than the tunnel water conveyance option would be likely to avoid and or lessen impacts as compared to the proposed project/action. Not only could each of these other water conveyance options be likely to have lower impacts than the proposed project water conveyance, one of these options, if carried forward to full analysis in the EIR/S co	
	comment continued	The alternative water conveyance concepts included in the preceding comment were dropped from the BDCP EIR/S alternatives screening process without supporting rationale and justification because the project applicant did not desire these solutions. Page 3A-18, line 30 correctly states that NEPA requires consideration of alternatives based on practicality and feasibility criteria, not based on desirability from the standpoint of the applicant. The BDCP EIR/S included appendix 1B Water Storage in which it spends 14 pages explaining why the BDCP did not have to consider water storage as a component of the solutions to address the needs and objectives identified for the project - see related comments on this appendix. I will reiterate here that I have never read anything so positional, biased and shamefully crafted to a desired outcome in an EIR or EIS as appendix 1B. 1B page 1 line 7 states, "While water storage is a critically important tool for managing California’s water resources, it is not a topic that must be addressed in the EIR/EIS for the BDCP. This is because the BDCP, as a proposed habitat conservation plan and natural community conservation plan, does not, and need not, p	
	The BDCP's proposed project includes changes to reservoir operations and flows in the tributaries downstream from the terminal dams in combination with CM1.	The BDCP's alteration of reservoir operations as part of CM1 sets a precedent that project actions are not limited to the "Plan Area". Since the BDCP has inconsistently applied the constraint of not considering alternatives or alternative components outside of the "Plan Area", the BDCP must include for full analysis and consideration in the EIR/S all alternative concepts that were excluded from consideration, in whole or in part, because they fell outside of the plan area.	

3A-18, line 5	The screening criteria relies upon comparing an option against the proposed project and proposed action.	At the time of the alternatives screening, there was no proposed project or proposed action identified so how could they be used as a criteria. The Proposed Project was selected so late in the process that it is Alternative #4 in the document instead of alternative 1 as it should have been if the proposed project had been identified earlier.	
3A-18, line 30	"Under NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives. Reasonable alternatives include those that are practical or feasible from the technical or economic standpoint and using common sense, rather than just desirability from the standpoint of the applicant."	Based on strong positional and biased content in Appendix 1B - see related comments - it is clear the applicant did not desire water storage as a project alternative. From the lack of documentation of the treatment of the water storage concepts submitted in the public scoping process it is clear that this potential project option was never given due consideration because the application did not desire that outcome. The BDCP EIR/S clearly is not compliant with the NEPA EIS requirement to consider all reasonable alternatives and to not exclude alternatives based only on the desirability of an alternative from the standpoint of the applicant.	
3A-18, line 30	The third level of screening includes evaluation of practicality and feasibility of potential alternatives.	Water storage, distributed intakes, criteria south delta fish screens, Sacramento Deep Water Ship Channel as a component of the conveyance all pass the test of practical and feasible for environmental, technical, legal and economic standpoints as compared to the challenges presented by the tunnel conveyance. In other words, these concepts would all likely have less environmental impacts, less legal challenges, less technical challenges, be more accepted by the local communities and be less expensive than the Proposed Project tunnel water conveyance. By passing this final set of criteria, all of these concepts should have been advanced to be combined into alternatives for full analysis in the EIR/S.	
3A-20, line 8	3A-12, line 37 says that the requirements of the Water Code Section 85320 from the 2009 Delta Reform Act are a screening criteria.	The Delta Reform Act is not a screening criteria. It is a list of items the legislation mandates will be included for analysis in the BDCP EIR/S and is not a list of requirements that any other concepts for consideration as alternatives must meet in order for them to be included in an alternative. This is a list of minimum alternatives that must be considered, not a list of maximum alternatives to be considered.	
3A-24, line 24	The State Water Board, as a CEQA responsible agency for the BDCP required specific alternatives to be included in the scope of the BDCP EIR/S analysis. "Does the range of alternatives include an alternative with long-term changes to the State Water Resources Control Board Bay-Delta Plan without new conveyance facilities?"	The EIR/S did not contain an alternative that did not include new conveyance facilities. It is clear from the text that the water board was not referring to the No Action alternative without new conveyance facilities but was referring to a project alternative that was to be included that did not include new conveyance facilities. The Through Delta conveyance alternative should not count as satisfying this request as there are new facilities (gates, armored levees, bypasses, etc.) associated with this alternative. The BDCP should be responsive to the CEQA responsible agencies request and include an alternative that does not include new conveyance. The previously identified additional upstream and/or downstream storage would meet the water boards request.	
3A-24, line 32	The State Water Board, as a CEQA responsible agency for the BDCP required specific alternatives to be included in the scope of the BDCP EIR/S analysis. "Does the range of alternatives reflect the coequal goals of the Delta Reform Act of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem?"	The BDCP EIR/S impact assessment WS-2: Change in SWP and CVP deliveries impact call was "No Determination" for both NEPA and CEQA for all project alternatives including the No Action and Proposed Project alternative 4. This means that the EIR/S was unable to decide if the project delivered a water supply benefit or not. If there is not a benefit to water supply in any of the alternatives as the EIR/S indicates, then the BDCP EIR/S has not met the water boards requirement to consider an alternative that provides a more reliable water supply. The BDCP EIR/S should develop and analyze an alternative that does provide a benefit to water supply reliability, revise the EIR/S document and recirculate the draft document for public comment.	

3A-24, line 32	The State Water Board, as a CEQA responsible agency for the BDCP required specific alternatives to be included in the scope of the BDCP EIR/S analysis. "Does the range of alternatives include an alternative that would contribute to reducing reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency?	The BDCP alternatives do not include any provisions for reducing reliance upon the delta for meeting water needs. The BDCP EIR/S should develop and analyze an alternative that does reduce reliance upon the delta as a water supply, revise the EIR/S document and recirculate the draft document for public comment.	
3A-24, line 38	"The Lead Agencies have determined that, if the answers to any of these questions are "No," an additional alternative should be included or an alternative should be modified to support a "Yes" answer."	The preceding three comments show that the answer was "no" at least 3 times, so the BDCP EIR/S needs to develop additional alternatives. By not having these alternatives, the project will not have "Alternatives responding to the requests from the State Water Board, the DSC, and EPA will likely form low-impact "bookends." The low impact bookend project alternatives are important as the alternative that meets the project needs and has the least environmentally damaging project alternative (LEDPA) must be adopted by the USACE and EPA for approval in their permitting process. By the BDCP omitting these bookend alternatives, the EIR/S is denying the opportunity to meet the project needs and achieve the lowest environmental impacts while meeting the project objectives. The current BDCP exclusion of these other alternatives is in direct conflict with the concepts and requirements of LEDPA.	
3A.6	The initial screening did not address a number of conveyance alternatives identified earlier in this chapter, including storage	No storage alternatives were considered in combination with through delta or other conveyance alternatives. These were never even considered for screening according to this Appendix 3 documentation.	
3A.6, line 12	A number of the conveyance alternatives identify tunnel options.	Unlike all the other conveyance alternatives, the tunnels are never described as to where this conveyance concept originated or any other background. The BDCP must provide disclosure of the source of the tunnel alternative conveyance and background on its development and previous investigations.	
3A.6	The tunnel conveyance was not proposed by the BDCP HCP/NCCP until the public scoping process for the EIR/S had been completed.	The HCP/NCCP is free to propose any project concept they want, but the EIR/S may not propose project alternatives that did not come from the public scoping process or were not introduced into the public record prior to the closing of the public scoping period. The BDCP has produced no evidence that the tunnel conveyance option was identified in the public record or scoping prior to the closing of the public scoping period for the ERI/S, so the EIR/S may not include any tunnel conveyance alternatives except the one proposed by the BDCP HCP/NCCP.	
3A -48, line 28	"The presentation also stated that there was a potential for delta smelt to enter the conveyance facility by passing through the lock."	The potential for smelt to become entrained in the locks during operation is exaggerated. If the lower end of the locks exposed to water that potentially have smelt in them are kept closed at all times except when a ship is entering or exiting the locks on the south end, the only opportunity for smelt to enter would be when a ship is entering or exiting the lock. This would be a noisy and turbulent area that the smelt would tend to avoid. Water used to fill the locks during transfers would be from smelt free upstream water as the SDWSC would always be at a higher stage elevation than the part of the channel downstream of the locks. This assessment also misses the concept that if a smelt were to become entrained in the locks that there would be a 50% chance that the smelt would exit the same way they came in so 50% of the straying smelt would rescue themselves from the entrainment. This BDCP assessment also misses the fact that the intakes that are associated with this conveyance option are upstream of all known smelt distribution, so there would be no take of smelt associated with the intake operations or structures. All other conveyance options do have take associated w	

3A -48, line 33	"The presentation also stated that the Deep Water Ship Channel would require construction because the facility (1) does not meet the seismic criteria for the Isolated Conveyance Facility, (2) was not designed to withstand the 200-year return flood and associated inundation, and (3) was not designed to withstand sea level rise that could occur over the next 100 years, and because levees may require improvement to store the additional water at higher elevations than existing flows."	The BDCP should have done it's own independent review of the viability of the Sacramento Deep Water Ship Channel (SDWSC) as a conveyance. Let's address each of the points the EIR/S cites. First, the SDWSC levees are over 50 meters wide. Even though it was not built to the latest seismic standards, a retrofit with slurry walls to get it to code would be less expensive and a much lower environmental impact than other conveyance options that were advanced for further consideration, e.g. compared to the eastern alignment surface canal (initial screening alternative B2), the retrofit of the SDWSC would be cheaper and have less environmental impacts. Second, the SDWSC would be an isolated facility, so would not be subject to flood flows. The existing CVP/SWP facilities that would be used as part of the conveyance in all of the alternatives would also not meet 200 year flood events without damage. Third, the Locke's at the South end of the SDWSC will protect it from sea-level rise. So out of the three reasons given by the BDCP for dismissing this alternative from further consideration, none of these reasons stand up to scrutiny and this concept should not have bee	
3A - 48, line 39	"The April 15, 2009 presentation included results from the 2006, 2007, and 2008 delta smelt surveys. The results showed the presence of over 700 delta smelt/10,000 cubic meters along the lower Deep Water Ship Channel near the potential locations of the new ship lock and intake. The information in the presentation included results of an analysis that showed that the number of delta smelt observed was generally less than 5% of the delta smelt observed in the western Delta."	We have worked with this data and the BDCP representation is extremely misleading from the facts. The smelt collects were almost entirely in the Cache Slough and Liberty Island areas and only 3 fish collected were from the SDWSC that would be in the area potentially affected by the SDWSC operation as a water conveyance. The BDCP must correct this gross misrepresentation of the survey data as it relates to the viability of this conveyance alternative and restore this option to full consideration in the EIR/S.	
3A - 49, line 1	"This alternative was 1 eliminated from further evaluation because it could adversely affect delta smelt and navigation along a federal navigation corridor."	The preceding 3 comments make it clear that this conveyance alternative may have lower delta smelt impact than any other conveyance option considered in the full analysis. Other conveyance options were carried forward that had larger potential adverse impacts to delta smelt, e.g. through delta. All the other conveyance alternatives that have north delta intakes also adversely affect navigation, so this is not a consistent rationale as a basis to eliminate the SDWSC as a conveyance option.	
3A - 49, line 8	"If the intake were located near the Port of West Sacramento, a single, large intake would be constructed at one location along the Sacramento River, which could result in localized impacts on aquatic resources and navigation, and could require modification of the locks at the Port of West Sacramento."	This can't be part of the rationale for excluding this conveyance from further consideration. One large intake is obviously stupid and unviable and was not included in any alternative that went forward in the screening process. Multiple intakes were discussed in context with this conveyance option including integrating intakes into modified and improved facilities at Fremont and Sacramento Weirs and at the existing SDWSC locks at West Sacramento.	

3A - 50, line 35	"Through Delta Conveyance with Fish Screens at Clifton Court Forebay. This alternative was eliminated from further evaluation because initial results of recent studies, including information included in the recent NMFS biological opinions, supported a phased approach that would emphasize improvements to operations of fish handling facilities and reduced predator potential within Clifton Court Forebay prior to further analysis of installation of fish screens."	OK, so there was some support for a phased approach of improving fish survival at Clifton Court Forebay. This information does not preclude consideration of this as an alternative for full consideration nor does it mean that the alternative could not have been phased.	
3A - 51, line 3	"These studies have indicated that it is difficult to find a location at the Clifton Court Forebay site for a single location that would provide appropriate sweeping velocities to reduce the entrainment of fish in accordance with USFWS and NMFS fish screen operations criteria or guidance."	See related comments on descriptions of Clifton Court Fish Screen Facilities that would meet screen operations criteria. It is possible to have compliant screens, so this is not a suitable reason to dismiss this alternative either. This alternative would have been much more viable if it was combined with upstream in-delta and/or downstream storage which would have allowed emphasis on diversion operations during winter periods in which endangered fish species were less exposed which would further improve fish protections at the south delta diversions.	
3A - 51, line 3	None of the EIR/S provided any rationale to eliminate this option from further consideration.	See preceding two comments. The BDCP provided lots of additional information other than these two points, but no more rationale regarding this options dismissal.	
3A.9	Conveyance operations	The BDCP EIR/S fails to identify sip vs. gulp intake operations that were identified in Steering Committee meetings and in the EIR/S public scoping comments - see related comments.	
3A.9.6	The BDCP considered different conveyance capacities, but did not consider any different intake sizes or designs.	The BDCP only considered on bank intakes that were 3,000 cfs in capacity. 3000 cfs is at the extreme end of the size for intakes that have any relevant precedence for use in the Sacramento River system. The BDCP did not conduct or present any due diligence regarding the use of smaller intake sizes that could have given fish a shorter duration of exposure to screen operations. the BDCP did not provide any rationale for all of the alternatives having on-bank instead of some of the alternatives including in-river intakes so the affects of that potential alternative component could be assessed. The BDCP EIR/S alternatives only included intakes at a single set of locations with no inclusion of alternative locations or combinations of locations. As an example, it would have been good to have an alternative that had intakes that are below the important Sacramento Tributary confluences with Sutter and Steamboat Sloughs. Intakes downstream of these confluences would have had the opportunity for juvenile salmonids to emigrate through these sloughs and avoid exposure to the intakes. The BDCP must include alternatives that incorporate different intake sizes, different intake types a	
3A.10.6.3	Decision Tree	This is not a decision tree. A decision tree has defined criteria for clear "yes/no" answers with clear actions or directives in response to the binary yes/no decisions. There are no decisions in the description of the tree nor any decision criteria or response actions described. This cannot be implemented as described, modeled or operated to, it is a farce. The BDCDP must provide real criteria, decisions and responses in a binary decision format or it must delete this non-decision non-tree "decision tree" from the EIR/S.	

3A-81, line 21	"Although there is much merit in this Portfolio-Based Proposal, the entire portfolio, viewed as a package, does not qualify as an EIR/EIS alternative for the BDCP, as its scope is far greater than can be achieved through a Delta-focused HCP/NCCP."	As identified in previous and other comments, the focus on the delta as the only geographic area that can be included or considered in addressing the identified BDCP purpose and needs and objectives is arbitrary, capricious, without merit and predecisional. See related comments on chapter 2. The BDCP must not drop the Portfolio Based proposal solely on the fact that necessary actions to meet the project objectives would occur outside of the delta. The BDCP must give this alternative full consideration in the revised EIR/S.	
3A-81, line 33	"Similarly, "[d]enveloping new water storage south of the delta" (see January 16, 2013, press release) is also beyond the scope of an HCP/NCCP focused on the Delta. DWR agrees that such new storage should be part of an overall water supply program for California in coming decades, as is made clear in Appendix 1B, Water Storage; but DWR's support for such supply augmentation cannot transform the BDCP from an incidental take permit focused on the Delta into a water plan for all users of Delta water."	New storage south of the delta may be outside of the scope of the HCP/NCCP, but it is not outside the range of reasonable alternatives that address the majority of the stated purpose and need of the project in chapter 2 of the EIR/S. The EIR/S statement is incorrect as additional downstream (and/or upstream) storage would allow delta operations to be altered such that they would avoid many of the current CVP/SWP operational conflicts with environmental resources (fisheries, water quality and water supply). We have a number of comments which address the fact that storage does meet project needs and should not be eliminated from further consideration and full analysis in the EIR/S just because the action would occur outside of a predecisionally defined geographic area.	
3A-85, line 20	"Similar to the Portfolio-Based Proposal, Congressman Garamendi's Water Plan would also (1) require changes in the manner in which local and regional water managers use their supplies, (2) involve unfunded levee improvements that are unrelated to restoration of the Delta ecosystem, and (3) include new storage projects outside of the Delta that are beyond the scope of the BDCP. As with the Portfolio-Based Proposal, the Congressman's Water Plan is also akin to a statewide water plan that would treat California as a single water planning unit and include steps about how to increase water use efficiency and water supplies throughout the entire state. Although these steps are highly meritorious, they are outside the scope of an HCP/NCCP for the Delta."	Let's break down these objections to this proposed alternative. 1) The BDCP can provide funding, training and technical assistance in the service area to achieve this component. It does not have to construct any facilities or change the operating independence of the service area entities. 2) Levees are part of the conveyance for the dual operations of the south delta diversions so they are a part of conveyance. Plus, levee improvements are great opportunities to incorporate habitat restorations, e.g. setback levee floodplain, large wood debris jams, riparian vegetation plantings for cover and forage. 3) The delta as a confined area of potential project action is arbitrary and unsupportable - see related comments. The proposal description has no components which match the accusation that the proposal is for a statewide water plan, see #1 above. Again, the delta is an artificial, predecisional constraint put into the purpose and need that should not have been used as an alternative screening criteria.	
3A-85, line 30	BDCP comparison of the Garamendi proposal with Alt B5.	We have already deconstructed and refuted the BDCP dismissal of Alt B5 in earlier comments in this section, so all of those same comments apply here. None of these BDCP arguments to dismiss this alternative are valid and this alternative should be included in the EIR/S for full analysis. If components of the proposal are truly unacceptable, then those should be dropped from the proposal, with supporting sound rationale, and then the surviving components of this alternative must be analyzed.	

3B	Where is the commitment to fund and implement the deconstruction of the BDCP at the end of the 50 year project period?	The BDCP cannot just assume that the project permits will be renewed at the end of the proposed 50 year project period. The BDCP must make provisions, financially and in management actions to decommission and remove the project features at the end of the project period. Otherwise if the project is not renewed, the public will be stuck with the cost of decommissioning, removing or maintaining the facilities and project features, e.g. levee maintenance, security, etc. in perpetuity.	
3B-1, line 19	"...they will not be restated in the impact analysis for each resource chapter but instead will be incorporated by reference."	The impacts of the environmental commitments, and there are lots of them, are not included in the impact assessments of the individual affected resources categories, but instead are buried here, deep in an unrelated appendix. These impacts were not appropriately assimilated into the impact calls of the respective resource categories and were not consistently referenced to this section.	
3B-1, line 21	"The BDCP 21 proponents will see to it that these measures will be implemented as appropriate,..."	This is not at all reassuring and provides no substantive assurance of compliance, especially since DWR will be running the facilities (according to the EIR/S, and DWR is only one of the 50 odd project proponents. How do the project proponents propose to ensure this happens when they do not have operational control over the project? Who determines what is appropriate and by what criteria. These must be disclosed.	
3B-2	"Table 3B-1. Summary of Environmental Commitments"	This table is not at all useful to the reader. Are we supposed to go back to each chapter and find each of these and do our own catalog of what each of these are? The presentation of this information is purposely difficult to use and does not meet the standard of making information accessible or understandable and that is in violation of NEPA and CEQA requirements.	
3B-6, line 4	"Detailed subsurface investigations will be performed at the locations of the water conveyance alignment and facility locations and at material borrow areas."	If the conveyance was described and analyzed at a project-level of detail then these studies would have been completed already. The findings of this work will make profound differences in the environmental impacts that the BDCP EIR/S has not evaluated or disclosed in this document. A simple example is that for an unstable area, the BDCP would have to relocate the facility or perhaps use a much larger foundation (which changes the volume of cement used, equipment used, number of hours of equipment used, etc.).	
3B-6, line 18	"The geotechnical investigation will also include a small scale environmental screening to assess the presence or absence of dissolved gases that will help guide the tunnel ventilation design and disposal considerations for excavated materials and tunnel cuttings."	This is saying that the tunnel access port locations may change from what has been analyzed in the EIR/S and that the BDCP might at this point, finally have some understanding of how and where the tunnel muck would be disposed. This is another example of how the conveyance is not described, evaluated, mitigated or disclosed at a project-level of detail. These are all material changes to the document and will require recirculation for public comment when they are added. The BDCP must not be awarded take or construction-related permits based on the currently deficient and incomplete project impact assessment.	
3B-6, line 23	"The locations of borings and other test locations will be <u>based on a review of available geologic data to identify data gaps in the conveyance alignment and on the locations of critical facilities such as hydraulic structures and tunnels</u>."	This data is available, and yet the BDCP has not yet utilized it. Where is this available data and why has the BDCP not disclosed it or utilized it in this EIR/S? An EIR/S is required by NEPA and CEQA to utilize the best available information. From this quote it is obvious that the EIR/S fails to do that.	
3B-7, line 14	"Localized settlement could occur during construction of BDCP water conveyance facilities. In particular, settlement above tunnels could occur in response to removal of earth materials at the tunnel face, convergence of voids created around the tunnel excavation, and stress redistribution around the excavated tunnel."	This is exactly why the delta residents and communities are so concerned about the TBM and levee stability. TBMs have been documented to cause levee failures, e.g. the Cargill Salt pond levee failure by the SFPUC TBM - see related comments. The BDCP describes several factors that can contribute to surface settling with the TBM. All of these could result in the TBM caused levee failure in the delta. The BDCP does not even know what kind of TBM it will use, see following comment, so the EIR/S does not even provide any assurance that the pressurized TBM that reportedly reduces some of these risks will be used. These are unacceptable risks to human health and property and the BDCP provides no assurances of how it will avoid, minimize or mitigate these risks and significant impacts.	

3B-7, line 17	"The magnitude and extent of ground settlement depends on the excavated diameter of the tunnel, the amount of ground cover above the tunnel, excavation methods, workmanship, details of tunnel construction, and the geotechnical properties of the ground."	The BDCP has provided no information on how these risk factors will be managed in the TBM process. The EIR/S is deficient in this regard and this material information must be provided.	
3B-7, line 22	"Based on the preliminary data regarding Delta ground conditions, it is assumed that an earth pressure balancing TBM will be used for all tunneling."	This is a big assumption. A project-level analysis would already know and disclose and evaluate the specific make and model of machine used.	
3B-7, line 27	Additionally, should geotechnical reports indicate that settlement is likely in certain areas, pre-excavation grouting will be performed ahead of the TBM to fill voids and stabilize ground prior to mining."	These grouting areas would be additional areas of surface disturbance and impacts that have not been identified, evaluated, disclosed or mitigated in this EIR/S document.	
3B-7, line 33	"A settlement monitoring program will be implemented on sensitive features—including levees, structures, facilities, pipelines, and utilities as required, to ensure that tunneling-induced settlement is controlled within acceptable limits."	The BDCP EIR/S has not disclosed what "acceptable limits" are for subsidence and structural disruption of levees. The answer should be "zero tolerance", but the BDCP fails to disclose what their limit of levee disruption is. The BDCP must describe, evaluate, disclose and mitigate whatever "tolerance" they have for subsiding delta levees and other land use and infrastructure.	
3B-16, line 6	"the BDCP proponents will ensure the preparation and implementation of erosion and sediment control plans to control short-term and long-term erosion and sedimentation effects and to restore soils and vegetation in areas affected by construction activities following construction."	These plans must be developed as part of the proposed project, not as an afterthought at some future undisclosed date. The methods of control have environmental impacts and they must be disclosed and mitigated. Further, the most important management aspect of this plan will be avoidance of areas prone to significant problems or sensitive receptor sites. If the BDCP implements these avoidance components of this plan correctly, it will change or modify the proposed locations of these activities, sometimes to locations that are not currently evaluated, disclosed or mitigated by the current BDCP EIR/S document.	
3B-26, line 20	"...facility operation noise levels at nearby residential land uses do not exceed 50 Leq during daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA Leq during nighttime hours (10 p.m. to 7 a.m.)."	Rural area noise levels are reportedly 30 dBA. 45dBA is 267% louder than that level. That is a significant impact.	
3B-34, line 39	"...the BDCP proponents will develop site-specific plans for the beneficial reuse of these materials...:	Here is another example of a conveyance measure action that is not at a project-level of detail in its description, evaluate, disclosure or mitigation.	
3B-36, line 30	"Should RTM decant liquid constituents exceed discharge limits, these tunneling byproducts will be treated to comply with NPDES permit requirements."	This would require water treatment facilities that the BDCP has not described, disclosed, evaluated or mitigated.	

3B-36, line 36	"In such instances, (anticipated to apply to less than 1% each of excavated spoils, RTM [or, 270,000 cubic yards], and dredged material), the material will be disposed of at a site approved for disposal of such material."	The BDCP has absolutely no supporting evidence for this incredibly optimistic estimate of materials volumes that may be contaminated. It is equally likely, based on the lack of information and disclosure of the tunnel muck chemical characteristics along the conveyance route, that 50% of the material could require class 1 disposal. This volume of trucking to Kettleman City dump would have significant air quality impacts and would be enough to severely impact the available capacity at the dump. The BDCP EIR/S did not evaluate the impacts of disposal of even its unsupported and ridiculously optimistic estimate of 1% alone a more realistic figure as described.	
3B-37, line 4	"The BDCP proponents will ensure the preparation and implementation of a pre-dredge sampling and analysis plan (SAP) to be developed and submitted by the contractors as part of the water plan required per standard DWR contract specifications Section 01570."	Seeing as the BDCP is seeking construction related permits for the project, these samples must be taken from the specific dredging locations proposed by the BDCP. If the locations are not specific enough to sample or the samples have not been taken, then the construction (dredging) permits must not be issued.	
3B-38, line 8	"Prior to construction, draining, and chemical characterization of spoil, RTM, and dredged material, the BDCP proponents shall identify sites for reusing such materials…"	The BDCP is saying it does not know where the tunnel muck would be reused. Moving the materials to a location from their storage areas will have air quality and traffic impacts that have not been evaluated, disclosed or mitigated by the BDCP EIR/S (let alone at a project-level of detail).	
3B-39, line 24	"Depending on which combination of these approaches is selected, implementation of material reuse plans could create environmental impacts requiring site-specific analysis under CEQA and/or NEPA. Many of these activities would require trucks or barges to gather and haul materials from one section of the Plan Area to another. For instance, reuse of material in the implementation of tidal habitat associated with CM4 could require material to be transported to locations in the West Delta ROA (including Sherman and Twitchel Islands) or the Cosumnes/Mokelumne ROA (including Glannvale Tract and McCormack-Williamson Tract), among other areas."	Yes, the tunnel muck disposal, which is an integral part of constructing the conveyance is not analyzed at a project-level of detail and would require subsequent environment analysis. Exactly our point, see preceding comment. The subsequent analysis of impacts that are integral to a project is called piece-mealing and it is in violation of both NEPA and CEQA regulations.	

3B-39, line 34	"While reuse locations near to the spoil or RTM areas would be preferred, such activity would require use of local roadways, which could lead to short-term effects on traffic, noise levels, and air quality. Similarly, earthwork and grading activities to restore sites to preconstruction conditions and to apply the materials consistent with their reuse could create noise and effects on air quality during the implementation of reuse plans."	Exactly, see the two preceding comments.	
3B-39, line 39	"Additionally, materials placed near levees could affect drainage and/or irrigation infrastructure."	Exactly, see related comments.	
3B-40, line 24	"BDCP proponents will retain a qualified water quality specialist, wildlife, or fisheries biologist with expertise in selenium management to develop a comprehensive Selenium Monitoring and Management Plan (SMMP)."	The BDCP should have already done this as these mitigation plans will almost certainly have their own impacts which have to be disclosed as part of the project.	
3B-41, line 1	"Minimizing bioavailable selenium concentrations associated with anoxic or near-anoxic conditions by reducing the amount of organic material at a restoration site…"	This is disturbing that the author is not aware that most of the habitat restorations proposed by the BDCP are on the highest organic matter soils there are, peat soils.	
3B-42, line 6	"Such a comparison shall identify the extent, if any, to which the impacts of proposed conservation projects may extend onto lands that were not considered in the BDCP EIR/EIS because they were outside these theoretical impact areas."	If this does happen, then the permits that were issued on the basis of this EIR/S are invalid as the implementation of the BDCP would fall outside of the envelope of environmental coverage and disclosure provided by this document. This again would be piece-mealing which is in violation of both NEPA and CEQA regulations.	

3B-42, line 30	"This commitment shall apply specifically to those purveyors affected by significant increases in bromide, electrical conductivity, chloride, and DOC concentrations such that the purveyors will bear increased financial costs in order to continue to treat or otherwise supply water to acceptable standards. The assistance provided by the BDCP proponents is intended to fully offset any increased treatment or delivery costs attributable to CM1, or for DOC attributable to CM2–22 and may take the form of financial contributions, technical contributions, or partnerships. Assistance for construction and/or operation of facilities or the procurement of replacement sources shall be limited to reasonable, cost-effective solutions developed with input from the BDCP proponents. It is anticipated that such solutions would be devised by the affected purveyors in consultation with BDCP proponents after thorough investigation and the completion of environmental review."	CM2-22 degrade water quality more than just DOC. Through evaporation in the aquatic habitat areas, increased EC, chlorides, bromides, and other chemical residues are concentrated. The BDCP must not only pay for the costs of water treatment (which the delta ag water purveyors do not currently do with their current water quality even though it is degraded and impacted from the current on permitted CVP/SWP operations) but also for the costs of any water quality impacts associated with ag discharge water quality and compliance costs thereof. Reasonable is a very subjective word that is incorrect here. The requirements for mitigation are for what is "feasible". Considering the cost of the facilities and habitat restoration and the value of the water being delivered by the project over a 50 year period of time, it is reasonable that the BDCP should be able to spend 25% as much as that total value on mitigating the significant water quality impacts to the senior water rights holders and users of the delta. The BDCP is proposing that the impacted parties pay to develop the plan to mitigate the impacts the BDCP has precipitated. The BDCP must develop and put forw	
3B-43, line 3	"Assistance shall not extend to investments needed solely or substantially to address adverse water quality effects due to any of the following: sea level rise and/or changed precipitation patterns attributable to climate change;…"	This explains why no operational changes were made in the No Action in response to climate change and they were in the Proposed Project and alternatives - see related comments. Climate change impacts, because no common sense responses to it with existing agreements and policies - see related MBK modeling analysis comments, overshadow the impacts of the Proposed Project and alternatives. Because the No Action was not equally treated in terms of response to climate change, most of the impacts from the Proposed Project are attributed to climate change. In this way, the BDCP can stack the deck so they don't have to pay for these BDCP impacts on delta water quality on the senior water rights holders and users. Again, the No Action must be revised to include reasonable responses to anticipated climate change affects that are within the agreed upon policies and practices of the CVP/SWP.	
3B-43, line 11	"3B.2.1.1 Chloride and Electrical Conductivity The following are concepts that affected purveyors could consider to address adverse effects of increased chloride concentrations and electrical conductivity…"	We have provided many additional more feasible and practical mitigation measures in our comments under water quality, water supply, land use and agriculture sections - see related comments.	
3B-43, line 33	"3B.2.1.2 Bromide"	See above comment.	
3B-44, line 16	"3B.2.1.3 Dissolved Organic Carbon"	See above comment.	
3C Table 1	These are all very generalized descriptions.	These ranges of locations and facilities sizes are not project-level detail.	

3C-7	"22,090 cy concrete, 1,700 kips of reinforcing bar."	This is very precise for a site that has not been defined and that the requisite geotechnical work has not been done on. This estimate will be wrong and all of the impact analyses that were based on it will be wrong as a consequence. There are many examples on this table and this entire appendix of false precision of information without any of the requisite work being done to support it. Some examples include: cement and rebar volumes, RTM volumes, earth moving volumes, haul volumes, haul distances,	
3C-11	"Projected solid waste excavation (not dredge material) from conveyance pipelines to be disposed of in landfills is estimated at 0.1%."	The preceding disclosure in appendix 3B said it was 1% and now here it is 0.1%. Obviously both are wrong and unsupported (see related comment), but they are definitely in direct conflict with each other. Even the difference between these exceedingly optimistic unsupported estimates have significantly different magnitude impacts. One or both of these are wrong and therefore so is the disclosure of related impacts.	
3C Table 7	"Final locations for storage of spoils, RTM, and dredged material would be selected…"	They don't know where the storage locations are so all of the information regarding equipment usage, air quality, traffic and other impacts is incorrect, invalid and not at a project-level of detail for analysis, disclosure and mitigation.	
3C Table 20	"Intake 2 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Intake 3 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Intake 5 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Pumping Plant 2 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Pumping Plant 3 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Pumping Plant 5 Same as Pipeline/Tunnel Alignment (see Table 3C-9) Pipelines Same as Pipeline/Tunnel Alignment (see Tables 3C-12 and 3C-13)"	The BDCP has gone out of its way to make sure the information is as confusing and inaccessible as possible. This reference to other sections goes on and on to the point this table is unusable. At lease this one provided a reference when many other instances in the main document failed to point to their supporting details in appendixes.	
3 E-8	Table 3E-1. Principal Active Crustal Fault Locations and Seismicity Characteristics in the Delta Region	These faults are closer in proximity to and higher risk factors for the current CVP/SWP canals and downstream storage at San Luis Reservoir than they are proven to be for the delta levees. The BDCP proposed no actions to improve the reliability of the existing CVP/SWP facilities from earthquake damage which is in conflict one of the primary purposes cited in chapter 2 for the project. The BDCP must propose actions to protect these other more vulnerable parts of the CVP/SWP delivery system. If there is a big quake and delta water quality is impaired from a levee break, it will not matter if the rest of the CVP/SWP delivery system downstream of the delta is also out of commission from the lack of implementation of actions to improve the integrity and reliability of this part of the system - see related comments.	

3 E-10, line 18	"Such structures are potentially capable of producing ground manifestations during offsets (e.g., subsurface shear zones and/or surface bulging), with the previously described Midland Fault, for example, exhibiting an anomalous relief feature of between 6.6 and 9.8 feet along the trace of this fault near the base of an associated peat layer (DWR 2009c, 2009d)."	The BDCP EIR/S does not disclose the design elements incorporated into the tunnel or canal options that would protect them from this type of event. The document is saying we should be worried about the levees for this and that the water supply must be protected from this, but does not say how the proposed water conveyances are protected from this or provide any analysis that these are safer then the current levee conveyances.	
3 E-10, line 33	"Potential seismic ground shaking in the Delta area has been evaluated using standard and modified Probabilistic Seismic Hazard Analyses (PSHAs)."	The BDCP should have done this analysis on the entire CVP/SWP system to address the stated project purpose to improve water supply reliability, specifically from earthquakes. Instead the BDCP artificially and without supporting rationale, limited this investigation to the plan area in the delta - see related comments on the incorrect geographic constraint on potential project actions.	
3 E-12, line 1	"Liquefaction and related effects are influenced by ground motion intensity and shaking duration."	This is another reason for concern for the use of the TBMs under the delta levees. They provide a source of intense and prolonged vibration exposure to the levees that increase the risk of levee liquefaction just like the BDCP claims an earthquake could. This risk is especially elevated during times when water levels are high and levees are saturated. The BDCP can minimize the risk of the TBMs causing levee failures by only operating at low flow tributary conditions - see related comments.	
3 E-13, line 7	"None of these failures is attributable to seismic events, but Delta levees have not experienced the greatest potential seismic shaking at their current size and configuration."	Correct, there is no documentation of a delta levee failure occurring from an earthquake. The vast majority of delta levees were constructed prior to 1906, so the BDCP statement that the delta levees have not experienced a major quake is incorrect and misleading.	
3 E-13, line 15	"The epicenter of the 1989 Loma Prieta earthquake (magnitude 6.9) occurred approximately 80 miles from the center of the Delta."	Yes, this quake did not damage delta levees, but it did damage the California Aqueduct by causing additional leaks in the reach in the Tracy Hills. This is why the BDCP must be looking to the other existing CVP/SWP infrastructure for earthquake vulnerability and not just the delta levees.	
3 E-14, line 31	"Liquefiable Material in the Levee Fill"	The BDCP correctly identifies that levees were mostly constructed from the adjacent local materials and that these materials are generally not well geotechnically suited for levee construction. Then the BDCP goes ahead and proposes that much of the tunnel muck local materials can be reused to build levees (after soil conditioning agents that deflocculate the soil structure to make it flowable have been added). The flowable quality that makes the tunnel muck easier to handle also would make it more prone to liquefaction under saturated conditions. This is extremely flawed and conflicting logic from the BDCP.	
3 E-15, line 10 - 18	Delta levees showed no damage in these simulations.	The BDCP must apply these same models and scenarios to the rest of the CVP/SWP water delivery infrastructure and see how it fairs. If the BDCP is worried about a 23% chance of a levee failure in a 1906 event, they should be focused on the damage that would certainly occur to their current canals.	
3 E-15, line 37	"Levees composed of liquefiable fill are likely to undergo extensive damage as a result of a moderate to large earthquake in the region."	This conclusionary statement is in direct contradiction to the preceding BDCP EIR/S text. There is no support In this text for that conclusion.	

3F-2, line 17	"… the FFTT was directed by the Conveyance Workgroup to focus on a reach of the Sacramento River between the City of Sacramento and Walnut Grove for locating fish screen intake facilities."	This was a predecisional geographic constraint placed on this early investigation that precluded other alternative concepts and locations from consideration. As an example, this precluded the FFTT consideration of locations above Sacramento that could have been diversions for a Western Conveyance that used the Yolo Bypass and Sacramento Deep Water Ship Channel for conveyance. There was no rationale for this artificial geographic constraint provided by the BDCP and therefore all of the work done on intake locations was predecisional. Consideration of intakes above Sacramento has several very favorable characteristics which were not considered, 1) it is upstream of the known geographic range of the smelt so the screens so the smelt would have had the ultimate protection level, avoidance, 2) screens could have been designed and operated to the less operationally constraining salmonid screen criteria (and not to the smelt criteria), 3) the American River salmonid and sturgeon populations would also have been spared exposure to these fish screens, and 4) this location is above the tidal fluctuation zone so intake operations would not have to ramp up	
3F-2, line 24	The intake size recommendations of the FFTT varied considerably from the single size facility the BDCP analyzed in their alternatives.	Three of the 4 recommendations were for 1,500cfs intake facilities and yet the BDCP only analyzed intakes of one size for all of the alternatives, 3,000cfs. This single size fits all approach of the BDCP to intake size non-alternatives fails to meet the test of a reasonable range of alternatives. One size for all alternatives is not a range. The BDCP must revise the alternatives to provide a reasonable range of alternative intake sizes - see related comments.	
3F-3, line 5	"Intakes should be located as far north as possible to minimize encroachment on Delta smelt habitat. This approach also improves sweeping velocities at intakes as a result of muted tidal backwater effects."	Exactly, see comment on 3F-2, line 17. This is why the intake location alternatives are fundamentally flawed. The FFTT said it was a "key conclusion" for intakes to be located above the distribution range of the smelt, but were precluded from exploring and developing these concepts by the predecisional of the BDCP on a constrained geographic range of consideration.	
3F-3, footnote	"Although intake locations were recommended to be as far north as possible they must also be sufficiently downstream from the SRCSD discharge for water quality considerations and also south of the confluence of the Sacramento and American Rivers for flow considerations."	Intake location #1 is less than a mile downstream of the SRCSD so this consideration was obviously discarded. It is true that Folsom releases contribute to the total flows for bypass criteria etc, but that does not preclude the consideration of intakes located above that confluence, especially since a reasonable range of alternatives would have had intake locations both upstream and downstream of that confluence. The intake operational affects of intake locations above and below the confluence with the American River should have been evaluated rather than predecisionally dismissed as they were.	
3F-5, line 3	"Individual points of diversion should be limited to 3,000 cfs based on FFTT and VPS study results."	The FFTT report says no such thing. It mostly recommended intakes of 1,500cfs size. Neither study directed that only 3,000cfs intake sizes should be considered in developing a reasonable range of alternatives.	
3F-7, line 3	"...tidal influence of downstream intake locations could result in multiple exposures to the same intake with tidal reverse flows."	This is true of all of the intake locations considered. Intake locations north of Sacramento would not have had this flaw - see related comments. We did not see the fish impact discussions do any quantitative analysis of multiple exposures to the fish screens the reverse tidal flows described in the BDCP quote. This is a serious omission of the impact analysis.	
3F-7, line 4	"...intakes located downstream of the sloughs and thus deeper into the tidally influenced reaches of the Delta could result in reduced water quality for diversions…"	This is an erroneous assumption and is not a valid rationale to dismiss these intake locations. By the time water quality was impaired from tidal influence in this reach of the river, several water quality operational constraints farther downstream, e.g. Emmaton, would shut down diversion operations anyway.	

3F-7, line 7	"...there is a potential for reduced water diversions due to diversion operation sweeping velocity constraints from increased tidal influence of the farther downstream intake locations."	This is true, but it seems a reasonable trade off that should have been considered in exchange for 30% of the fish to not be exposed to 40% of the intakes. The straight math says that is a 12% reduction in fish exposure to intakes. That is not an insubstantial gain in the best kind of fish protection, avoidance. This is certainly a large enough biological benefit to have merited full consideration in a reasonable range of alternatives even if there was the potential (unquantified) reduction in intake operating efficiency.	
3F-7, line 32	"...including the elimination of one particular site due to prohibitive existing features and conditions."	The BDCP failed to disclose which one and for what specific conditions. If the BDCP had disclosed that, then the public would be able to evaluate and comment on if the BDCP proposed locations also had those same conditions or not. The revised EIR/S must disclose this information.	
3F-8, line 1	"Locating two intakes downstream would also lengthen the distance the intakes are spread along the Sacramento River, providing increased refuge areas between structures..."	This is another good reason that an alternative with downstream intakes should have been considered. The BCDP failed to provide a reasonable range of intake location alternatives that include configurations that allowed for more fish resting time and refuge between intake locations. The comparative analysis would have provided some quantification of the benefits to fish survival rates of the additional resting times between fish screen exposures, but the artificially constrained range of alternatives prohibited this outcome of the alternatives analysis.	
3F-9, line 29	"...the DWR engineering team obtained bathymetric data for the entire river reach and began evaluating the proposed site locations for appropriate river geometry,..."	The BDCP had bathymetry available, but did not use it to do 2D or 3D modeling of water velocities at the intake screen face to determine approach and sweeping velocities. The BDCP used this data and modeling to compare between intake types, but not the operations required at each intake site to ensure compliance with fish screen operating criteria. This is a significant failure by the BDCP to utilize the readily available information and to apply the best available science. All recently approved fish screen construction projects have conducted this kind of modeling and analysis in their environmental reviews. the BDCP must not be issued take or construction related permits for the intakes due to the failure to use generally accepted and best available science level of analysis.	
3F-9, line 26 - 10, line 9	These rationale are all very supportive of consideration of intakes being located downstream of the confluence of Steamboat Slough.	By the BDCP's own documentation, these intake locations should have been included in the evaluation of a reasonable range of intake location alternatives.	
3F-12, line 5	"Locate intakes downstream of the town of Freeport due to public scoping comments received in March 2009 citing construction impacts in an overly constrained conveyance corridor, historic building conflicts, and the precedent set by the Freeport Regional Water Project EIR indicating that intakes in the Pocket area would produce significant impacts."	These rationale do not preclude consideration of intake locations above Sacramento, but these locations were not considered.	
3F-13, line 4	"Sites on or just below an outside bend in the river are preferable. It is anticipated that these sites will be deeper, have higher sweeping flow velocities, and be less subject to sedimentation."	This location preference is contrary to the results from the USACE's Clarksburg Bend river cross-section fish distribution study. The BDCP did not need to speculate that the depth might be deeper or shallower inside or outside of bends because it had the river bathymetry data available. The BDCP did not need to speculate on sweeping velocities and sedimentation if they had used the best available science of 3D modeling of water velocities at the proposed intake locations. The BDCP failed to provide sound rationale for this location preference which is contrary to the best available published literature and failed to utilize the best available science. The BDCP must revisit the intake location selection process without this unnecessary and incorrect locational bias.	

3F-13, line 17	"However, the proposed operational criteria under development by the DHCCP would have these lower intakes operating only during relatively high flow periods, and they would be required to shut down any time sweeping velocities were not meeting the minimum deemed to be safe for juvenile salmonids and adult delta smelt."	This says the operational criteria for intake operations in tidal influenced sweeping velocities were not developed. Obviously they must be developed, evaluated, disclosed and mitigated. Intake operations have talked a lot about bypass flow requirements but there has been no section or evaluation on how intakes would be operated to comply with fish screen criteria for approach and sweeping velocities in an intertidal zone subject to slack and reverse flows. Obviously these operations make a difference in how much water can be diverted during tidal cycles, but we can find no description, analysis or disclosure discussion on the topic of how these were integrated into the CVP/SWP operations modeling and affects analysis. A north delta intake operations model must be developed and integrated into the CALSIM modeling as a feedback loop, just like all of the other CVP/SWP facilities have their own operating model feedback loops - see related comments.	
3F-13, line 23	"The interface between the fish screen facility and the river bottom will need to be evaluated to minimize impacts to sturgeon."	Yes, that must be evaluated. When is that going to happen? Certainly it must before take and construction permits can be issued.	
3F-13, line 25	"The FFTT agreed that more information was needed to determine the potential effects for each of the covered species from placing structures below the sloughs, and recommended that the EIR/EIS evaluate the option to site intakes below Steamboat and Sutter Sloughs."	Why was this recommendation of the expert team disregarded and a reasonable range of alternative intake locations provided in the EIR/S?	
3F-14, line 23	"(NMFS) proposed phased construction of the intakes to reduce uncertainty surrounding the impacts of simultaneous construction."	This is reasonable. It is just like an air quality standard that must be adhered to during construction. The constraint is on how much you can do at a time and still protect the resources. NMFS is just correctly identifying that the project should only be allowed a certain rate of take as a limit. Cost and schedule cannot be a consideration in whether or not to comply with a limitation on the rate of take when it comes to jeopardy of endangered species. The BDCP must comply with NMFS request for phased intake construction to manage the rate of take or NMFS and FWS should not issue the take permits.	
3F-14, line 35	"The EIR/S evaluates construction of all intakes regardless of phasing in order to support the total impact in the analysis."	If the BDCP may potentially construct as a phased implementation then the analysis must be of a phased implementation. The timing, duration and combination of impacts make a difference on the affects on the resources. As an example, the construction of all intakes at once has a greater impact during a shorter period resulting in more mortality of single cohorts. A phased construction would have lower impacts on an individual cohort, but impact more cohorts. It is possible, and should be evaluated, that the phased construction would end up genetically selecting fish based on their behavior and susceptibility to construction related take such that it could genetically modify the population over time. These impacts were not considered or included in the BDCP impact analysis, not disclosed and not mitigated. Analyzing the impact of simultaneous construction therefore does not provide impact coverage or disclosure for a phased construction implementation.	
3F-15, line 17	"...salmonids emigrating along the main stem Sacramento River would encounter some or all of the intakes proposed for construction, unless they travel downstream through the Yolo Bypass or Sutter and Steamboat Sloughs."	The BDCP also discussed the possibility of reconnecting the head end of Elk Slough as a restored distributary, in part to provide fish an opportunity to avoid exposure to the intake screens. Where is the disclosure of that information and what was the undisclosed rationale for not including this as a conservation or mitigation measure?	
3F-15, line 19	"Shorter screen lengths have been desirable to reduce the exposure time for fish swimming past the front of a screen."	This is why the BDCP should have included the alternative for smaller fish screens rather than all of the alternatives being a single large intake size. The BDCP must redo their intake alternatives to provide a reasonable range of sizes and analyze those in an alternative.	

3F-15, line 22	"Potential intake locations upstream of Scribner's bend were eliminated from consideration, due to the concern of proximity to a wastewater treatment plant located a few miles upstream."	This is yet another argument for considering intakes upstream of Sacramento as they would avoid the sewage outfall entirely rather than just having a thoroughly mixed outfall where the current proposed BDCP intakes are located. For this and all the previously identified superior site characteristics, the BDCP must include intake locations upstream of Sacramento to have a reasonable range of intake locations.	
3F-15, line 38	"There is also a natural gas field nearby that will need to be further examined in the process."	This is the EIR/S so now would have been the time to investigate, evaluate, disclose and mitigate. From this quote it is obvious that the EIR/S fails to do that for these resources and therefore is deficient.	
3F-16, line 40	"...overall benefits are small (0% to 6% increase in overall survival)."	First, these survival increases are in direct conflict with information presented on this exact topic earlier in this appendix. Second, even a 6% increase in survival is not a small benefit for an endangered species that is on a population trend trajectory to extinction. The ESA requires that all feasible measures to protect the species are implemented down to the last member of the species. These benefits are clearly worth the effort and must be a component of the approved plan or it will be in conflict with the ESA.	
3H-1, line 17	"...the Sacramento River facilities would be operated considering tidal variations…"	These tidal operations of the intakes are never described, disclosed, evaluated or mitigated in the EIR/S. This is an omission of a critical component of the operational description and does not meet the standard of a project-level description or analysis.	
3H-2, line 37	"Sub-surface explorations are planned to evaluate the foundation soils and also to determine the suitability of using on-site materials for embankment construction."	Without this information, earthmoving volumetrics cannot be calculated and their impacts not evaluated, disclosed or mitigated. Without this information, this is not a project-level analysis and cannot be issued take or construction permits.	
3I-14, line 3	"...Water Code section 85320, subdivision (b)(2)(D), of the Delta Reform Act requires that, to be 3 eligible for incorporation into the Delta Plan, the BDCP EIR/EIS comply with the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) (CEQA),..."	The EIR/S is not CEQA compliant as it was predecisional (see related comments), biased (see related comments), did not include a reasonable range of alternatives (see related comments), used a No Action baseline in substitution for the No Project (which is different than the NA) (see related comments) and proposed to piece-meal the environmental affects by having integral parts of the project subject to subsequent environmental analysis (not just the habitat restorations either) (see related comments). All of these are in violation of CEQA and the EIR/S is not a CEQA compliant document.	
3I-18, line 6	"...including a comprehensive review and analysis of "the resilience and recovery of Delta conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster."	The existing CVP/SWP pumping facilities and aqueducts are part of the delta conveyance. Without these facilities delta flows cannot be conveyed. The BDCP did not evaluate earthquake risks to these facilities or include any project alternative components to address these risks. The BDCP EIR/S clearly fails to meet this regulatory requirement and is therefore not eligible to be incorporated into the delta plan or receive state funding.	
3I-22, line 16	"Water Code section 85320, subdivision (b)(2)(G) requires the BDCP to comprehensively review and 16 analyze the "The potential effects of each Delta conveyance alternative on Delta water quality."	The BDCP water quality analysis is deficient in many aspects - see related comments. Due to these deficiencies, the BDCP does not comply with this requirement and is not eligible to be incorporated into the delta plan or to receive state funding.	