CALIFORNIA CENTRAL VALLEY
FLOOD CONTROL
ASSOCIATION

July 29, 2014

Via Hand Delivery and E-mail (BDCP.Comments@noaa.gov)

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re:Comments of CA Central Valley Flood Control Association on Bay-Delta Conservation Plan and EIR/EIS

Dear Mr. Wulff:

On behalf of more than 75 members, the California Central Valley Flood Control Association (CCVFCA/Association) submits these comments on the Draft Bay Delta Conservation Plan (BDCP) and the accompanying Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). This consolidated set of comments is intended to provide a more comprehensive view of the EIS/EIR and provide an ease of review by the project proponents, rather than submittal of separate comments from individual member agencies.

I. ASSOCIATION HISTORY AND INTEREST IN BDCP

A. Association History

In existence since 1926, the Association was established to promote the common interests of its membership in maintaining effective flood control systems in California's Central Valley for the protection of life, property, and the environment. The CCVFCA's members include reclamation and levee districts, plus cities and counties with flood management responsibilities along the Sacramento and San Joaquin Federal Project and non-Project levee systems within the Sacramento-San Joaquin Delta.

The Association's general interest in the Bay-Delta Conservation Plan (BDCP) is with the substantial modification of the State and Delta flood control systems proposed as water conveyance and habitat restoration projects necessary to continue operation of the Department of Water Resource (DWR/department) State Water Project (SWP) and United States Bureau of Reclamation (USBR/Bureau) Central Valley Project (CVP). The Association notes that many of its members have additional concerns related to impacts other than flood control, such as water delivery, and that such comments are being provided in separate submittals.

The Association's specific interest is assuring that the construction, implementation, and operation activities associated with the conveyance and habitat restoration projects contained in the Plan's 22 Conservation Measures (CMs) will not in any way impede, diminish, or impair the flood flow capacity or functionality of the State and Delta's levee systems. These flood facilities are integrated and dependent on each other to operate as a system to protect people and property year-round, but particularly during flood events, and their public safety function must not be compromised.

B. Relevance of Flood Management to BDCP Project

In numerous public meetings and written communications the Association has advised the BDCP management and consultants that CM 1 and most of the restoration projects in CM2-22 are in fact projects that propose significant encroachments on the facilities and performance of the Central Valley's flood control system, including its largest and most important flood protection feature – the Yolo Bypass. While each of these projects contained in the BDCP Conservation Measures are being proposed for the purpose of SWP/CVP water conveyance, because many of the individual projects will modification the location, configuration, and purpose of the Central Valley's flood control system; thus are in essence flood control projects that increase public safety risks by generating a negative flood impacts on the system.

Specific CMs proposing to modify the configuration, location, and purpose of existing flood management facilities include:

1) CM1 Water Conveyance Facilities – propose to build on, penetrate, and move project levees;
2) CM2 Floodplain Habitat – proposes to modify the Fremont Weir to divert water into the Yolo Bypass (the major work horse of the Central Valley flood control system) more frequently and for longer durations than designed for flood control in order to create fish habitat as mitigation for jeopardy to covered fish species caused by pumping at the South Delta CVP/SWP export facilities;
3) CMs 4-11 – each propose to remove, breach, move, plant vegetation, etc. additional State and local flood control structures throughout the Plan Area.

C. Association Expectations

Due to the multitude of impacts expounded on in the following comments, the Association requests that prior to final approval of the HCP/NCCP and certification of the EIR/EIS a permit condition be added to the Plan and Implementing Agreement requiring DWR to execute a formal binding agreement with the Central Valley Flood Protection Board (CVFPB) to:

1) Establish general principles and guidelines for any proposed alterations of flood control facilities in the Plan Area, particularly those affecting the State Plan of Flood Control's (SPFC) location, configuration, purpose, and functionality;
2) Design and operate BDCP conveyance and habitat projects and activities to be consistent and complementary to the modifications of the SPFC and other flood protection facilities currently being planned in the Central Valley Flood Protection Plan (CVFPP) process, including Regional Coordination Committee Plans;
3) Avoid impacts that reduce the level of flood protection achieved in recent years from the construction of flood protection projects in the Plan Area and adjacent communities that were financed with local, State and Federal funding (i.e., Prop. 1E and 84, WRRDA appropriations) as well as projects planned for implementation in the near future pursuant to the CVFPP or U.S. Army Corps of Engineers' ongoing feasibility studies in the Plan Area.

II. STRUCTURE AND USE OF COMMENTS

A. Supplemental Comments and Informational Attachments

While the comments in this letter contain the bulk of the NDWA's comments, we have created a Reference Library to include additional documentation supplementing or supporting comments contained herein. The documents in the Reference Library are the prior comments submitted by The Association during the BDCP process. They must be considered by DWR, and the federal action agencies must be included in the administrative record for the Plan and EIR/EIS and responded to pursuant to NEPA (40 CFR § 1503.4) and CEQA (14 CCR § 15088). .

B. Comments on BDCP by Other Entities

The Association hereby joins the comments submitted in this proceeding by the following entities:

- Central Valley Flood Protection Board
- North Delta Water Agency
- Local Agencies of the North Delta (LAND)

- Counties of Sacramento, Yolo, and San Joaquin;
- Contra Costa Water District

C. Expectation Of Response

All of the recommendations contained in these CCVFCA comments for modifications to the Public Draft BDCP Plan, Effects Analysis modeling, and EIR/EIS are intended to serve as ALTERNATIVES AND/OR MITIGATION MEASURES to reduce significant environmental impacts and should therefore be treated as such for purposes of responding to these comments pursuant to NEPA (40 CFR § 1503.4) and CEQA (14 CCR § 15088). Accordingly, the Association expects responses to all comments and recommendations contained herein, including any Attachments, to indicate the outcome of the recommendations.

Potential outcomes include:

1. Modifications to the alternatives, including the proposed action;
2. Development and evaluation of new alternatives not previously given serious consideration;
3. Adoption of mitigation to avoid or minimize significant environmental effects;
4. Supplementing, improving, or modifying the analyses;
5. Making factual corrections;
6. Explaining why the comment does not warrant further response, including citing the specific sources, authorities, or reasons supporting the lead agency's position.

III. SUMMARY OF CCVFCA COMMENTS ON BDCP

The Association's primary concern with respect to the BDCP planning and environmental review documents is that as a whole the actions contained therein represent the most significant alteration of the State Plan of Flood Control (SPFC) ever proposed, yet the Plan and EIR/EIS simply fail to acknowledge this alteration. Ten of the 22 conservation measures proposed in the Plan directly and in many cases significantly impact flood control facilities, however the impacts actually described in the Plan and EIR/EIS are spread out throughout the 40,000 page tome in a way that minimizes public disclosure, analysis, and mitigation of the BDCP's overall impacts on the flood control *system*, making the EIS/EIR legally deficient.

These impacts manifest themselves in multiple ways, as discussed in this comment letter, and if not properly analyzed, disclosed, and mitigated; then the BDCP's proposed actions could

cumulatively undermine the reliability of the State Plan of Flood Control, which the State is legally obligated to maintain.

With the BDCP proposing large areas of ecosystem restoration as a long-term goal in the Plan Area, this may also result in a future deficiency of suitable land for mitigation of flood control projects to benefit the Delta region and economy. Any limitation on the ability to offset local levee improvement environmental impacts over the long term because BDCP has already usurped available lands due to extensive acreage conversion will prevent the Delta from "evolving as a place" and ultimately increase flood risk exposure to people and property in the Plan Area. In addition, establishing aquatic habitats often creates negative impacts to third parties including seepage damage to crops, erosion of levees protecting lives and property, entice listed species to areas resulting in new localized ESA burdens, and, affect access to local water supply by altering surface and groundwater elevations (both lowering and raising).

Following are issues of concern related to CM1-22 activities that require significantly more analysis, disclosure, and mitigation than what is provided in the current Draft BDCP Plan and EIR/EIS:

Some of the impacts discussed in this letter include:

- Damage to levee integrity and stability from material haulage and other construction activities that go way beyond the design and intended use of these rural facilities, seepage and erosion scour, intensive pile driving, and increased subsidence and sink holes from CM1 dewatering;
- Deflection and obstruction of flood flows in selected Delta channels due to cofferdam construction, levee reconfigurations, sediment loading, and other construction activities that may redirect flows and alter flood risks throughout the ten-year construction timeframe;
- Impairment of ditches, pumps and other interior drainage facilities vital to the maintenance of low-lying Delta lands through the discharge from CM1 dewatering activities, disconnecting interconnected drainage systems, and seepage waters exceeding existing local capacity;
- Obstruction of levee maintenance, flood fighting and emergency response activities through the clogging of Delta levee roadways and channels with construction traffic and equipment, and through the monopolization of barges and repair materials;
- Interference with long-standing levee maintenance and repair programs in the Delta through usurpation of habitat mitigation opportunities on which these programs depend;
- Disruption of the levee-dependent agricultural economy of the Delta as a collateral consequence of the effects described herein;

- Cumulative effects on the flood control system, particularly SPFC facilities and operations.

Feasibility Conflicts:

- CVFPP flood protection project funding and implementation;
- USACE's no vegetation on project levees policy;
- Permitting difficulty for widespread dredging in BDCP;
- Diminishment in flood protection level achieved with prior Prop. 13, 1E, and 84 investments;
- FEMA building requirements and NFIP flood insurance eligibility;
- Increased public infrastructure liability to state and possibly export water districts (*Paterno* liability)

Issues Are More Complex Than Water Supply Reliability

Modifications to a bypass or to a levee system can have impacts in other areas of the system outside of the Plan Area, and modifications of the surface water or soil can affect the ability of the system to deflect, carry, divert, and otherwise deal with flood flows. This issue is critical to members of the Association because they are responsible – along with the State – for the operation and maintenance of the flood control system *as a whole*.

Under inverse condemnation laws, the state of California is liable for damages to people or property, particularly where it has altered or modified public works. Pursuant to the *Paterno* "acceptance doctrine," any public entity with "power to control or direct the aspect of the public improvement that is alleged to have caused the injury" to plaintiffs will be held liable. No matter who builds or funds the project, "[w]hen a public entity accepts responsibility for an improvement, it becomes that entity's public improvement."[1] Indeed, the state of California did not even build the levees that were litigated in *Paterno*; rather, it assumed control of these levees from the federal government.[2]

For the reasons covered herein, we request the BDCP Plan and EIR/EIS be revised to address the multiple flood control challenges posed by the current draft, assure compliance with ESA/CESA and CEQA/NEPA laws, and be recirculated for public review and comment.

[1] *Paterno* at 1030.
[2] *Paterno* at 1029-1034

IV. FACTUAL BACKGROUND

A. History of Reclamation in the California Central Valley

Historically, more than 40 percent of Northern California's runoff flowed to the Delta via the Sacramento, Feather, San Joaquin, and Mokelumne Rivers, with peak winter flows resulting in substantial flooding in the valley floor about every ten years.

In its natural condition, about one-quarter of the Central Valley extending along more than 14 counties was subject to annual or periodic overflow, so the first flood-control projects were the low levees the farmers built to protect their lands from inundation. Flood damage in the Sacramento Valley and Delta occurs almost entirely from rain floods, principally on Sacramento, Feather, Bear, Yuba, and American Rivers as well as Stony, Cache, and Putah Creeks, with smaller creeks also causing localized flooding. The Delta also experiences damaging floods along the San Joaquin River and its tributaries including the following stream groups: Mokelumne River, Calaveras River, Littlejohn Creek, Merced County, Madera County, and Fresno County. Currently, most snow-melt run-off is stored or diverted for beneficial uses or passes harmlessly to the ocean, but prolonged high-water stages can cause seepage through levees if they are not vigilantly maintained and improved to withstand the occasional flood event with excessive run-off draining through the Central Valley and Delta.[3]

In 1850 Congress approved the Arkansas Act granting several states title to all of the Swamp and Overflowed Lands, including approximately 2 million acres in California. [4] The State considered the reclamation of these swampy lands essential because of their extraordinary fertility when drained (reclaimed) and also because they posed a significant public health risk due to outbreaks of malaria from the mosquito breeding. The State and Federal government therefore proceeded to actively encourage the reclamation of these lands for purposes of productive farming.

B. SRFCP Purpose and History

The Sacramento Valley and Delta now receives a substantially higher level of flood protection. Authorized by Congress in 1917, the Sacramento River Flood Control Project (SRFCP) is a system of "Project levees" and flood bypasses designed and built by the U.S. Army Corps of Engineers (USACE/Corps). The individual segments and elements are intended to function as integrated flood control components to facilitate farming and protect people and property in the Central Valley Basin, including the San Joaquin River tributaries.

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[3] United States Dept. of the Interior, *Central Valley basin; a comprehensive report on the development of the water and related resources of the Central Valley basin for irrigation, power production and other beneficial uses in California, and comments by the State of California and Federal agencies.* [Washington, U. S. Govt. Print. Off.] 1949.

[4] Arkansas Swamp Lands Act, Act of September 28, 1850, codified at California Public Resources Code Section 7552, 7552.5.

Complex System of Public Works

The SRFCP consists of leveed channels along natural waterways, supplemented where necessary by leveed bypasses which serve as relief valves to carry surplus flows that the natural rivers cannot accommodate. There are more than 1,600 miles of State-federal Project levees in the Central Valley, 385 miles of which are located in the Delta. More than 700 miles of additional Delta levees are classified as "non-project." The key component of the SRFCP system, the Yolo Bypass, carries 80 percent of the water at the latitude of Sacramento during extreme floods.[5]

Collectively, the facilities, lands, programs, conditions, and mode of O&M for the State-federal flood protection system in the Central Valley are referred to as the State Plan of Flood Control (SPFC).[6] This comprehensive system of SPFC flood control facilities is the largest flood management system in California, and includes:[7]

- About 440 miles of river, canal, and stream channels;
- More than 1,600 miles of levees along the Sacramento River channel, Sutter and Yolo basins, and Feather, Yuba, Bear and American Rivers;
- 4 relief bypasses (Sutter, Tisdale, Sacramento, and Yolo);
- Knights Landing Ridge Cut, to connect the Colusa Basin to the Yolo Bypass;
- 5 major weirs (Sacramento built in 1916, Fremont built in 1924, and Moulton, Tisdale, and Colusa built in 1932/33);
- 2 sets of outfall gates;
- 5 major drainage pumping plants; and numerous appurtenant structures such as minor weirs and control structures, bridges, and gaging stations.

[5] Flood SAFE California, flyer, State Plan of Flood Control Descriptive Document (2012). Available at http://www.cvfpb.ca.gov/CVFPP/05_CVFPP-SPFC-DD-11212.pdf

[6] Public Resources Code (PRC) Section 5096.805 (j). A complete description of these assets and resources has been compiled by DWR into the *State Plan of Flood Control Descriptive Document,* available at http://www.water.ca.gov/cvfmp/docs/DRAFT_SPFC_Descriptive_Doc_20100115.pdf

[7] See *State Plan of Flood Control Descriptive Document*, which states, "It is important to note that the SPFC is only a portion of the larger system that provides flood protection for the Central Valley. The SPFC relies on many other features that do not meet the definition of the SPFC. For example, non-SPFC reservoirs provide substantial regulation of flows to levels that SPFC facilities can mostly handle. Private levees, locally operated drainage systems, and other facilities work in conjunction with SPFC facilities. Management practices such as emergency response, floodplain management, and other practices are part of the overall flood protection system. All parts of the system, including the SPFC, depend on other parts of the system to operate as a unit."

All of these Project and non-Project levees and flood bypasses serve to protect $47 billion in infrastructure in the Central Valley, including the State's water conveyance infrastructure.[8] By 1949, over 90 percent of the SRFCP project works had been completed and in operation.

C. SPFC Responsibility

Today, the SPFC consists of a vast and intricate system of levees, bypasses, weirs, channels, and pumping plants which were designed for three purposes:

1) Flood control;
2) Reclamation of marshy lands for farming and other productive uses;
3) Improvement of navigation.

In 1953, the SPFC works were transferred to California with a memorandum of understanding (MOU) confirming the State's obligation to operate and maintain all completed works/facilities and to hold the federal government harmless.[9] For the Sacramento River and tributaries, the Corps requires the State to maintain the channels to pass the design flows at stages at or below the 1957 design profile.[10] In addition, the State has signed assurance agreements with the U.S. Army Corps of Engineers to maintain the San Joaquin River Flood Control Project in accordance with the 1955 MOU.

Jurisdiction and authority throughout the drainage basin and for the 1.7 million acres within the state's Sacramento and San Joaquin Drainage District (SSJDD) is the responsibility of the Central Valley Flood Protection Board (CVFPB/Board).[11] Created by State legislation in 1913, the SSJDD holds the property rights on about 18,000 parcels of SPFC lands, some going back to 1900.[12]

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[8] Flood SAFE California, 2012 Central Valley Flood Protection Plan: Maps of Levee Conditions, Proposed Improvements, and Assets Protected (2012) Available at http://www.cvfpb.ca.gov/CVFPP/08_CVFPP-Map-brochure-11212.pdf

[9] 1953 Memorandum of Understanding (USACE and The Reclamation Board, 1953) and Supplements. Available at ftp://ftp.water.ca.gov/mailout/CVFPB%20Outgoing/Orientation%20Materials/Item%203C%20-%20LM%20Assurance%20Agreements/Example%201%20-%20srfcp_mou_1953%20--%20jsp%20copy.pdf.

[10] Central Valley Flood Protection Board *Flood Control System Status Report* (summary document) Available at http://www.cvfpb.ca.gov/CVFPP/04_CVFPP-fcssr-broc-11212.pdf; Central Valley Flood Protection Board webpage, "Flood Control System Status Report." Available at http://www.cvfpb.ca.gov/profiles/index.cfm

[11] Authority rests in the Flood Protection Board pursuant to assurance agreements with the USACE and the USACE Operation and Maintenance Manuals under Code of Federal Regulations, Title 33, Section 208.10 and United States Code, Title 33, Section 408

[12] Central Valley Flood Protection Board webpage, "Sacramento-San Joaquin Drainage District Jurisdiction Maps." Available at http://www.cvfpb.ca.gov/cvfpb/ssjdd_maps/

Compatibility with Flood Control Objectives

Under California law, no modification to the SPFC system (encroachment or project) may be constructed on or near the Sacramento and San Joaquin Rivers or their tributaries until plans have been reviewed and the projects have been approved or issues a permit by the CVFPB.[13] The CVFPB meets at least monthly to consider individual projects submitted by landowners and other entities with project proposing SPFC encroachment and to implement additional projects related to their overall Strategic Plan for the maintenance and improvement of the federal/State flood control system.[14] To reduce the risk of flood damage, the Board manages the Central Valley's floodways by protecting levees from erosion, controlling encroachment into floodplains and on flood control works, and by cost-sharing the State's responsibilities for maintenance and construction of improvements to the system with the USACE and local landowners. Annual inspections of the SPFC levee system are conducted twice annually by DWR.[15] The Board authorizes use of the SPFC facilities by issuing encroachment permits only *if the project is compatible with the flood system and will not hamper the State's O&M responsibilities.*

When an improvement to any feature of the SPFC system is completed, the Board accepts responsibility for the project, but transfers the daily operation and maintenance (O&M) duties to a local agency: typically reclamation and levee districts or joint power authorities that also include cities and counties with flood management responsibilities such as Sacramento Area Flood Control Agency (SAFCA).

D. Liability/Inverse Condemnation – *Paterno*

Inverse condemnation liability gives private individuals a pathway to recover for disproportionate damages caused by public improvements projects.[16] After the 1986 flood, a lawsuit involving some 3,000 plaintiffs claiming damages from a SPFC Project levee failure which resulted in evacuations, deaths, and hundreds of millions of property damage was filed against the State (*Paterno v. State of California*).[17]

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[13] Central Valley Flood Protection Board , A Century of Progress: Central Valley Flood Protection Board 1911-2011 (2011). Available at http://www.cvfpb.ca.gov/Publications/DWR100Years_05.pdf

[14] Central Valley Flood Protection Board Strategic Plan (2013) Available at http://www.cvfpb.ca.gov/strategicplan/2013/9012013_CVFPB_Strategic_Plan.pdf

[15] 2013 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Projection System (providing that "DWR, under the authority of Water Code § 8360, § 8370, and § 8371, performs a verification inspection of the maintenance of the SRFCP levees performed by the local responsible agencies, and reports to the USACE periodically regarding the status of levee maintenance accomplished under the provisions of Title 33, Code of Federal Regulations (CFR), Section 208.10. While there are no specific water code provisions directing DWR to inspect and report on Maintenance of the San Joaquin River Flood Control System, DWR has performed inspections and provided reports for many years as a matter of practice that is consistent with Title 33, CFR.") Available at http://cdec.water.ca.gov/current_reports.html.

[16] *Locklin v. City of Lafayette*, (1994) 7 Cal.4th 327 at 367

[17] *Paterno v. State of California*, (2003) 113 Cal. App. 4th 998; 6 Cal.Rptr.3d 854 (2004)

Key factors in assessing the "reasonableness" of the risk inherent to the state's levee project included the large size of the project, the lack of direct benefit to the plaintiffs from the project, the feasibility of alternatives, and the fact that the state benefitted as a whole from the decision not to fund the levee improvements that would have prevented the breach,[18] with foreseeability a supplemental issue considered. Following that decision, DWR itself wrote that "[b]etter coordination is needed between agencies making land use decisions and the parties, often the State, which must bear the burdens and liabilities of those decisions."[19]

Risk of Liability Exposure

Some of the issues raised in the *Paterno* decision regarding responsibility for liability included whether: 1) the public should pay the costs inherent in public works, including damages, foreseeable or not; 2) the system, as designed, constructed, operated, and maintained, exposed plaintiff to an "unreasonable" risk of harm; 3) the **location and configuration of the system** and its purpose to divert the natural flow for flood protection, reclamation, and navigation were themselves "reasonable"; 4) the damage was **"proximately caused" by the public improvement as designed and constructed**; and 5) if the State failed to undertake any studies to determine its adequacy to meet the waters the State proposed to route against it.

In 2003, the State of California settled the case for $467 million after the Third Appellate Court concluded in an appeal of the inverse condemnation lawsuit that the State was liable as the party responsible for the SRFCP facilities. The court agreed that the *Paterno* plaintiffs' damages were "directly caused by an unreasonable State plan which resulted in the failure" of the levee, therefore finding the State liable to pay for these damages.[20]

The appellate decision also cited case law stating that a public entity is a proper defendant in an action for inverse condemnation if the entity "substantially participated in the planning, approval, construction, or operation of a public project or improvement that proximately caused injury to private property. So long as the plaintiffs can show substantial participation, it is immaterial 'which sovereign hold title or has the responsibility for operation of the project.'"[21] The appellate court further declared: "the State, but not the District, is liable for *Paterno's* damages, because of the unreasonable plan within the SRFCP which accepted the levee as built without any measures to ensure it met design standards."[22]

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[18] *Id.* at 1017; Locklin, 7 Cal 4th at 368-369.
[19] Department of Water Resources, "Flood Warnings: Responding to the Flood Crisis in California." (January 2005)
[20] *Id.*
[21] *Paterno*, citing *Arreola,* 99 Cal.App.4th at p. 761
[22] *Paterno,* 6 Cal.Rptr.3d 854 (2004) at 864.

E. Local LMA and RD Roles

California reclamation districts (RDs) are legal subdivisions of the State responsible for managing and maintaining the levees, channel embankments, drainage canals, pumps, and other flood protection structures.[23] Each RD is autonomous in its responsibilities and is generally managed by an elected board of trustees from eligible landowners and funded by assessments levied on parcels of State and private property.[24]

With very limited exceptions, California law grants local districts with immunity from suit for liability associated with levee failure or other types of flood damage.[25] Even if a local district has been negligent in conducting O&M, and that negligence is associated with a levee break, a damaged landowner may still not be able to recover.[26]

The reason for district immunity is simple: the law is intended to encourage the formation and continued existence of districts in order to maximize flood control projects. If local districts were financially responsible for all flood damage in their jurisdictions, they would be quickly dissolved, leaving landowners to maintain their own levees—a virtually impossible task without a centralized, competent staff, engineering consultants, heavy equipment, and a stable funding source.

F. State's Delta Levees Program

In the Delta, the State's Delta Levee Program has dramatically improved flood control and increased the reliability of water conveyance by utilizing a very efficient process of partnering with the local flood control agencies for levee maintenance and improvements.[27] The flood protection projects are funded initially by the local agencies and reimbursed by the State once the costs are submitted by the local agency.[28] Because the State only pays a percentage of the total cost, and the local agencies fund 100 percent of the work up front, there is great incentive for the local agencies to perform the work in the most cost effective and efficient manner possible.

The levee improvements made since the inception of the Delta Levees Subventions Programs have dramatically reduced the risk of flood within the Delta as evidenced in the reduced number

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[23] Cal. Wat. Code § 50000 et seq.
[24] *Id.*
[25] *See generally* Gov't Code § 810 et seq.
[26] *See, e.g., Kambish v. Santa Clara Valley Water Conservation District,* 185 Cal.App.2d 107 (1960); *Tilton v. Reclamation Dist. No. 800,* 142 Cal.App.4th 848 (2006).
[27] Central Valley Flood Protection Board, D*elta Levees Maintenance Subventions Program Guidelines: Procedures and Criteria* (2011). Available at http://www.water.ca.gov/floodsafe/fessro/docs/subventions_guidelines.pdf
[28] DWR Flood Management, Flood Control Subventions Program Section webpage. Available at: http://www.water.ca.gov/floodmgmt/fpo/sgb/fcs/

of levee failures during the flood events in 1997 and 2006. Currently, most, if not all, SPFC Project levees in the Delta already *exceed* PL 84-99 standards. Nearly all levees in the Delta are above the 100-year floodplain, and failure due to high tides or high flows has been essentially eliminated, thanks in large part to the success of the Delta Levees Program.
SB 200 (2012) by Senator Lois Wolk (D-Davis) extended the current state-local cost-share formula for the Delta Levees Program through 2018.

Flood control funding available through Proposition 84 and 1E will soon be gone (Proposition 1E bond issuance authorization expires in 2016) and the State's costs for the ongoing maintenance and operation of the SPFC have increased under the new standards mandated by the Legislature; e.g., 200-year urban level of protection; remapping of new flood hazard zones by FEMA; and more intensive enforcement by the Corps. Meanwhile, the Bay Delta Conservation Plan (BDCP), the Delta Plan, and the Central Valley Flood Protection Plan (CVFPP) do not include funding for the State's levee system maintenance and improvements. All three documents express the importance of investing in Delta levees, but do not provide solutions as to how to pay for such investment. Therefore, even the State's most successful Delta program, the Delta Subventions and Special Projects programs currently being funded with bond proceeds will have to rely on substantially lower State General Fund contributions if new funding is not provided in future water bonds.

The Delta Levee Subvention Program has also been a critical factor in maintaining the levee HMP standard for eligibility in the Federal funding for Disaster Assistance which typically pay for 75 percent of the recovery costs following a flood event and subsequent levee failures. These costs would be borne by the State and local agencies if the minimum levee standards are not maintained.

G. Prop. 1E Investments -- Reducing Flood Risks

The 2005 Hurricane Katrina levee failures in New Orleans heightened the awareness of Californians and the State Legislature to the flood risks in the Central Valley due to expanding populations protected by levees and the location of important statewide infrastructure. As a result, the California voters approved a $4 billion bond (Proposition 1E) in 2006 to rebuild and repair California's most vulnerable flood control infrastructure to protect people and property. Prop. 84 enhanced these flood risk reduction efforts with an additional $800 million for flood control projects approved by voters.[29]

The CVFPB reviews, approves, and enters into funding agreements under the Delta Levee Maintenance Subventions Program to "preserve the physical characteristics of the Delta

[29] Resources Agency, "Bond Accountability: Proposition 1E Overview" webpage. Available at http://bondaccountability.resources.ca.gov/p1E.aspx

essentially in the present form" and involves more than 60 local reclamation districts in the Delta and Suisun Marsh to maintain, plan, and complete levee maintenance projects to improve the flood control system and provide protection to public and private investments in the Delta including water supply infrastructure, agricultural production, and ecosystem habitat.

Since 2006, an unprecedented number of flood protection projects were completed by DWR, the Board and its reclamation districts. Funds for Delta Subventions levee projects covering approximately 650 miles of levees, both Project and non-Project, has been in the $10-16 million annual range since the passage of Prop. 1E and 84. After July 1, 2016, Prop. 1E funding is no longer available for appropriation.

In addition to placing flood protection bond measures before the voters, the State Legislature also passed legislation requiring the Board to develop a Central Valley Flood Protection Plan (CVFPP) currently being implemented by local Regional Coordination Committees and DWR.

H. Central Valley Flood Protection Plan Implementation

On June 29, 2012 the Central Valley Flood Protection Board adopted, with some modifications via Board Resolution 2012-25, the Central Valley Flood Protection Plan (CVFPP) prepared by the CA Department of Water Resources.[30]

The CVFPP is intended to be a comprehensive new framework for system-wide flood management and flood risk reduction in the Sacramento and San Joaquin River Basins,[31] and includes an extensive habitat Conservation Strategy component.[32] This plan provides conceptual guidance on reducing the risk of flooding for more than one million people and $70 billion worth of homes, businesses, and infrastructure in the Central Valley with a goal of providing a 200-year level of protection to urban areas[33] and reducing flood risks to small communities and rural agricultural lands.

Regional Coordination Committees are currently in the process of developing through a cooperative local process,[34] the flood control projects for their region which will eventually be

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[30] Central Valley Flood Protection Board, Central Valley Flood Protection Plan (CVFPP).Available at http://www.water.ca.gov/cvfmp/docs/2012%20CVFPP%20FINAL%20lowres.pdf.
[31] CVFPB, "Central Valley Flood Protection Plan: Major Physical and Operational Elements of Preliminary Approaches and State Systemwide Investment Approach" (2011). Available at: http://www.cvfpb.ca.gov/CVFPP/07_CVFPP-SSIA_elements_brochure_12dec2011.pdf
[32] DWR, 2012 Central Valley Flood Protection Plan Attachment 2: Conservation Framework (2012). Available at: http://www.water.ca.gov/floodsafe/fessro/docs/flood1_conservation_framework.pdf
[33] DWR, Urban Level of Flood Protection Criteria (2013) Available at: http://www.water.ca.gov/floodsafe/urbancriteria/ULOP_Criteria_Nov2013.pdf
[34] DWR, "Regional Flood Management Planning" webpage. Available at: http://www.water.ca.gov/cvfmp/regionalplan/

combined with the System-wide Improvement Projects concurrently being developed by DWR.[35] Three of the six Regions in the CVFPP have portions of the legal Delta and Plan Area in their planning jurisdiction.

I. Federal Flood Recovery Program (PL 84-99) & Levee Vegetation

In recent years, the CVFPB has relied on funding appropriated by the State Legislature from bond measures approved by California voters to finance the continual flood facility maintenance and improvements. Over time due to changing societal expectations for public safety and ecosystem protection, the costs of maintaining the Central Valley's interconnected flood protection system has risen dramatically. As a result, the Board often struggles with the increasing costs of maintaining the SPFC system to the 1957 design standards and keeping up with conflicting government mandates regulating flood control and natural resource protection, and maintaining eligibility for federal recovery funding under Public Law 84-99 to repair levee damage after a flood event.

Army Corps Enforcement

After decades of giving most Central Valley SPFC levees "Acceptable" ratings, the Corps recently announced that several segments of the SPFC flood control systems are no longer acceptable or eligible under the PL 84-99 program, effective immediately. However, the Corps did indicate they will continue to offer flood fighting assistance in cases of emergency for all levee systems, regardless of their active status in PL 84-99.

The Corps indicated the unacceptable ratings for all 17 systems was due to encroachments and erosion and/or bank caving, but vegetation on levees remains an area of contention as well. Under the Corps' vegetation regime, levee systems must not have vegetation on the upper-third of the riverside slope, on the crown, on the entire land-side slope, or within 15 feet of the land-side toe (subject to pre-existing right-of-way). In effect, the Corps' vegetation policy prohibits vegetation on and around federal project levees.[36] The Corps has issued a Policy Guidance Letter permitting a "vegetation variance" under certain conditions, but those conditions are physically or fiscally impossible to achieve in most of the Central Valley, particularly in the Delta. [37]

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[35] DWR: *Implementing the Central Valley Flood Protection Plan: State-Led Basin-Wide Feasibility Studies* (2013). Available at http://www.water.ca.gov/cvfmp/bwfs/BWFS_Summary_2-Pager_20130411.pdf

[36] Those who obtain System-Wide Improvement Frameworks (SWIFs) can often compromise with the Corps on levee vegetation; however, not all Delta levees will be eligible for or seeking a SWIF.

[37] For more information about the specific California challenges regarding the Corps vegetation policy, s*ee also* DWR, "Effects of U.S. Army Corps of Engineers' Policy on Levee Vegetation in California" Webpage. *Available at:* http://www.water.ca.gov/floodsafe/leveeveg/

Levee Vegetation Prohibition

Specifically, a levee vegetation variance may be granted only where "the analytical levee prism" is un-invaded by roots greater than 0.5 inches, potential erosion and scour, or potential tree overthrow pits. Practically, this means vegetation variances will only be obtained where existing levees are redesigned and reconstructed to create over-widened cross sections with unobstructed levee prisms. This represents a near-physically impossible solution in urban areas (where levees are cheek-by-jowl with residences) and a financially impossible solution in rural areas such as the Delta due to small levee maintenance budgets. Thus, while a variance is technically available, it can seldom be used in the Central Valley.

The Corps has encouraged the systems to request a re-inspection if sufficient improvements have been made to change inspection rating or to develop and submit System-Wide Improvement Frameworks (SWIFs) to allow systems to retain PL 84-99 eligibility while the levee and channel improvements are made in a "worst-first" approach.

To date, the Corps has inspected 32 of the Valley's 118 levee systems. It is widely conceded that several more levee systems may soon be removed from active status for similar cause in the future. Consequently, the State has increased financial exposure because it now has 100 percent responsibility for flood damage repairs for those ineligible SPFC Project levees that have been found deficient in their overall maintenance – and because more levee systems are expected to be moved to the "Unacceptable" category. The Corps will fund flood fights on these levees, but will not pay to rebuild them and restore flood protection.

J. FEMA Mapping and Flood Insurance

Most of the Delta is considered to be Special Flood Hazard Areas (SFHA) and participating in FEMA's National Flood Insurance Program (NFIP) by the county adopting and enforcing floodplain management ordinances on new construction in a floodplain that meets or exceeds FEMA's minimum criteria to reduce future flood damage in the 100-year floodplain.

- *Is FEMA Harming Delta Fish?*

In June 2010, the Kern County Water Agency and Sacramento's Coalition for a Sustainable Delta which is an organization formed by Delta water exporters sued the Federal Emergency Management Agency (FEMA), claiming the Agency's National Flood Insurance Program (NFIP) encourages development in the floodplain, resulting in elimination of valuable habitat and harming protected fish species. Pursuant to a settlement, FEMA is paying a $200,000 fee and beginning a biological assessment of the flood insurance program's potential effect on

protected Chinook salmon, Central Valley steelhead and Delta smelt. The assessment could result in an order to implement additional environmental restrictions on development in the Delta floodplain through NFIP. Plaintiffs contended that NFIP's financial incentives for the construction of levees designed to withstand 100-year floods endangers listed species. FEMA has lost or settled six similar lawsuits in other states and is currently preparing a comprehensive, nationwide environmental study to evaluate the effects of the program on listed species.

K. Prop. 218 Limitations – Prohibits Assessments for "General Benefits"

As subdivisions of the State of California, reclamation and levee districts must comply with Prop. 218 when raising assessments on property owners to fund flood management activities.

Proposition 218[38] is a California Constitutional Amendment that restricts local government's ability to impose property assessments in several important ways. First, it requires local government agencies to conduct a vote of the affected property owners for any proposed new or increased assessment before such rates can be levied.

Secondly, it tightens the definition of the two key findings necessary to support an assessment: special benefit and proportionality. An assessment can be imposed only for a "special benefit" conferred on a particular property.[39] A special benefit is "a particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large."[40] The definition specifically provides that general enhancement of property value does not constitute `special benefit.' In the case of assessments on landowners by reclamation districts, only the portion attributable to providing flood protection is considered a "special benefit," while habitat improvements for species protection and recovery is a "general benefit" that applies to broader public.

An assessment on any given parcel must be in proportion to the special benefit conferred on that parcel: "No assessment shall be imposed on any parcel which exceeds the reasonable cost of the proportional special benefit conferred on that parcel." [41] Additionally, "The proportionate special benefit derived by each identified parcel shall be determined in relationship to the entirety of the capital cost of a public improvement, the maintenance and operation expenses of a public improvement, or the cost of the property-related service being provided."[42]

Because only special benefits are assessable, and public improvements often provide both general benefits to the community and special benefits to a particular property, the assessing

[38] (Articles XIIIC and XIIID) (approved by voters in November 1996)
[39] Art. XIII D, §§ 2, subd. (b), 4, subd. (a))
[40] Art. XIII D, § 2, subd. (i)
[41] Art. XIII D, § 4, subd. (a).) (7)
[42] *Id.*

agency must first "separate the general benefits from the special benefits conferred on a parcel" and impose the assessment only for the special benefits.[43]

The benefits associated with expanding floodplains and riparian habitats are both general benefits shared by the public at large. And to the extent that either of these functions will be considered habitat values/conditions that will be credited under the BDCP or BiOps for meeting those habitat permit requirements, then they are special benefits to the SWP, CVP or water contractors – not the Delta property owners. Thus, reclamation district assessment money is unlikely to be able to fund the entire costs associated with implementing, operating, or maintaining habitat areas, particularly if the purpose of those projects are to obtain regulatory permits for state and federal water conveyance projects.

V. RISKS FROM ALTERATIONS TO FLOOD CONTROL PURPOSE, FUNCTION - EFFECTIVENESS MINIMIZED AND OVERLOOKED

A message too often lost in the Delta planning process is the fundamental significance of flood protection and control. The levees are not simply one part of the greater complex of problems focused around the Delta—or merely an inconvenient system with adverse impacts that must be addressed in an EIR/EIS. This comprehensive interconnected system of levees is absolutely critical to public health and safety, including the protection of the region's transportation, agriculture, business, homes, and even water conveyance.[44] Levees provide this protection at all times, during two daily high tides and seasonal high-flow events.

Flood Protection Is Paramount

As mentioned previously, the CVFPB requires permits for any project that may affect how the SPFC functions, including any encroachments that:

1) Are within State-federal flood control project levees and within a Board easement;
2) May have an effect on the flood control functions of project levees;
3) Are within a Board-designated floodway;
4) Are within regulated Central Valley streams listed in the Board's Title 23 regulations.[45]

Ten of the BDCP's 22 Conservation Measures contain projects that would become encroachments on SPFC facilities. As a result, permits from the USACE, Board, and approval

[43] Art. XIII D, § 4, subd. (a)
[44] DWR *A Framework for Department of Water Resources Integrated Flood Management Investments in the Delta and Suisun Marsh* (September 24, 2013)
[45] Title 23 Section 112 "table 8.1 - Regulated Streams and Nonpermissible Work Periods

from local reclamation districts must be acquired. As an example of an encroachment, the BDCP's proposed Sacramento River water diversion intakes (CM1) and operable diversion gate on the Fremont Weir would inundate the Yolo Bypass more frequently (CM2) than designed for flood flows. This constitutes a substantial alteration of the location, configuration, and purpose of the SPFC flood protection system and will certainly require purchase of easements from the underlying landowners to accommodate the new purpose of the easement.

The Association therefore asserts that the levees in the Plan Area must be recognized for what they are: the highest public priority for all who live in the Delta or depend on it for their livelihood. As a part of this recognition, the BDCP Plan and EIR/EIS must embrace – as a fundamental permit condition – the requirement that the existing level of flood protection be maintained to protect people, property, infrastructure, habitat, and conveyance. In other words, uphold the three co-equal goals contained in California's Delta Reform Act.[46] As most public agencies within the Delta are constantly upgrading their level of flood protection, it is also essential that BDCP does not create a new barrier to future ability to increase local level of flood protection.

Even in a 1949 Progress Report to Congress on the development of the Central Valley Project, the U.S. Interior and USBR acknowledged the importance of giving "full consideration to the needs for flood control and the necessity for coordinated operation of reservoirs, canals, and channel improvements to that end." Based on our review of the Draft Plan and EIR/EIS, the Association contends that the BDCP fails to maintain this federal commitment through any coordination in the governance structure and the absence of any evaluation of impacts to the SRFCP and other Delta flood control facilities.

A. Fails To Analyze Increased Flood Risks From Substantial Alteration the Location, Configuration, and Purpose of SPFC

The combined actions in the BDCP's Conservation Measures propose the largest modification of the SRFCP/SPFC facilities that have ever been made since they were transferred to the State. Yet the EIR/EIS inexplicably failed to analyze or mitigate the impacts from the construction and operation on:

1) Individual flood control facilities;
2) Flood control infrastructure as it operates as a system;
3) Obstructions reducing flow capacity during 10-year construction such as 10 in-water cofferdams;
4) The 1957 design flow capacity;

[46] California Water Code Section 85320 et al. (2009)

5) Ability to inspect, maintain, improve, operate, or floodfight on SPFC flood control facilities during 10-year construction;

6) Flood infrastructure maintenance during construction impacts;

7) Evacuation plan in construction areas during a flood event;

8) RD budgets, which will suffer from lost assessment revenues during the 10-year construction (and possibly beyond that period);

9) RD maintenance costs, as RDs deal with increased seepage, erosion, levee maintenance, or drainage pumping costs;

10) Future non-BDCP mitigation, given the permanent loss of substantial amount of habitat available for RDs to mitigate future levee improvements and the lack of identified, alternative options;

11) New PL 84-99 eligibility problems and FEMA flood insurance rates and building restrictions; and

12) Multiple additional flood impacts the BDCP failed to recognize, analyze or mitigate.

As mentioned, the SRFCP consists of a vast and intricate system of levees, bypasses, weirs and other works originally designed for flood control, reclamation and improvement of navigation – ***not*** for water conveyance. The encroachment upon these public works facilities proposed in nearly half of the CMs is for the purpose of continuing ESA/CESA authority (BiOps/FRPA) to export water from the Delta, including creation of aquatic habitat in order to mitigate for "jeopardy" findings relative to the operation of the existing and future CVP/SWP facilities. This represents a substantial change in the purpose of these facilities and works.

Below are implementation actions in 10 of the CMs that may impact (adversely or beneficially) existing flood protection facilities and SRFCP 1957 design flow capacities, none of which are adequately covered in the draft EIR/EIS:

CM1 – New Conveyance Facilities

As proposed, CM1 would require project proponents to:

- Construct three intakes on Sac River eastside levee within 4 mile stretch (possibly moving these levees too?);
- Erect at least nine in-water cofferdams in Sac River and several Delta channels for construction of three intakes and six barge loading facilities. Ultimately, the construction plans might call for even more cofferdam locations, including at Sacramento Weir or locations where operable gates are being installed;
- Construct cutoff walls to prevent seepage;

- Increase sediment loading and removal at intake locations;
- Place riprap on levees where intakes located;
- Construct 6 barge landings on levees (need to determine which are Project/SRFCP);
- Construct new North Bay Aqueduct intake on west side of Sac River;
- Modify approximately six miles of levees, on either a temporary or permanent basis; and
- Install power lines over existing levees.

CM2 – Fremont Weir Modification & Yolo Bypass Inundation

As proposed, CM2 would require project proponents to:

- Lower Fremont Weir from 33.5 feet to 17 feet, and construct an operable gate for water diversion into Yolo Bypass;
- Erect a cofferdam in Sac River (leaving uncertain the length and the number of feet that would be encroached into the riverbed);
- Inundate the Yolo Bypass more frequently and for a longer duration;
- Modify Lisbon Weir;
- Realign Lower Putah Creek and create floodplain habitat;
- Use supplemental flows through Knights Landing Ridge Cut by redesigning Colusa Basin Drain Outfall Gates to accommodate more flows;
- Build support facilities throughout the Yolo Bypass (including operations buildings, parking lots, access roads and bridges);
- Remove existing and constructing new levees, berms, and water control structures;
- Reduce Tule Canal and Toe Drain capacities;
- Improve positive drainage of the entire length of Fremont Weir (potentially);
- Improve levees adjacent to Fremont Weir Wildlife Area to maintain existing level of flood protection and beneficially reuse excavated earth;
- Increase the wetted area and residence times, flow ramping, and recession of water moving through Yolo Bypass (thus altering the hydrodynamic characteristics of the Bypass);
- Modify Sacramento Weir to reduce leakage;

- Install new gates at all or portion of Sacramento Weir and impose modifications to the stilling basin (This might include construction of fish passage facilities at Sacramento Weir which would involve excavating a channel to move water from the Sacramento River to Sacramento Weir, and from Sacramento Weir to the Toe Drain);
- Require vegetation maintenance;
- Entail sediment removal from Fremont Weir (approx. 1 million cy within 1 mile of weir expected every 5 years);
- Require sediment removal inside the new channel (an additional 1 million cy every other year); and
- Propose sediment disposal on lands in vicinity of Fremont Weir, unless the sediment is used as source material for levee improvements.

CMs 4-11 – Habitat Creation in 6 ROAs throughout Plan Area (Plan Sec. 4.2.3 and Table 4-4)

As proposed, CMs 4-11 would require project proponents to:

- Breaching, modifying, or removing existing levees and construction of new levees;
- Grading, excavating, and placement of fill material (much of this work occurs near levees);
- Modifying, demolishing, and removing existing infrastructure (including buildings, roads, fences, electric transmission and gas lines, irrigation/drainage canals located near levees); and
- Removing existing vegetation and planting or seeding of vegetation (potentially affecting the PL 84-99 compliance of local districts).

CM4 – Tidal Habitat Creation (65,000 acres)

As proposed, CM4 would require project proponents to:

- Breach or eliminate existing levees in order to increase the amount of tidal environments throughout Delta;
- Grade and dump fill in some locations;
- Excavate channels to encourage development of dendritic networks within restored marsh plain;

- Modify ditches, cuts, and levees for the stated purpose of encouraging more natural tidal circulation and better flood conveyance;
- Remove or relocate infrastructure, including breaching levees for the stated purpose of to restore tidal connectivity;
- Demolish existing levees or embankments or create new structures to allow restoration that (proponents hope) protects adjacent land;
- Re-contour the surface of levees (prior to breaching them) for the stated purpose of maximizing the extent of surface elevation suitable for establishment of tidal marsh vegetation, placement of fill on subsided lands;
- Import dredged or fill material (again, prior to breaching)and place it in subsided areas for the stated purpose of establishment of tidal marsh vegetation;
- Potentially construct dikes to maintain existing land uses when tidal habitat is restored adjacent to farmed lands or lands managed as freshwater seasonal wetlands;
- Cultivate stands of tules through flood irrigation (again, prior to breaching) for sufficiently long periods to raise subsided ground surface to support marsh plain, and then breach levees when target elevations are achieved;
- Breach or remove dikes along Montezuma Slough and other Suisun Marsh sloughs and channels for the stated purpose of reintroducing tidal connectivity to slough watersheds;
- Deepen or widen existing tidal channels, if necessary to increase tidal flow;
- Possibly grade restoration sites (based on local hydrodynamic conditions, topography, and sediment transport) to accelerate development of tidal channels within restored marsh plains. Following introduction of tidal exchange, tidal marsh vegetation will be planted and – proponents hope – naturally establish in marsh plains;
- Construct dikes in Suisun Marsh with low gradient slopes to support vegetation; and
- Design new marsh channels and levee breaches with the stated purpose of maintaining flow velocities in order to minimize conditions favorable to establishment of aquatic plants and predatory fish.

CM5 – Seasonally Inundated Floodplain (10,000 acres additional to Yolo Bypass CM2)

These activities would occur throughout Plan Area, but the plan states that the most promising opportunities for large-scale floodplain restoration reportedly occur in the South Delta. Seasonally inundated floodplain modifications must be designed, implemented, and maintained to allow passage of flood flows at the required flood system design flow and to comply with other flood management standards and permitting processes. Ideally, this process will be

coordinated with USACE, DWR, CVFPB, and other flood management agencies to assess the desirability and feasibility of channel modifications.

As proposed, CM5 would require project proponents to:

- Restore floodplains that have been lost as a result of flood management and channelization activities;
- Set back or remove existing levees;
- Remove riprap or other bank protection to allow for channel meander between the setback levees and to allow for channel migration between the setback levees through natural erosion and sedimentation;
- Conduct grading to restore drainage patterns to increase inundation frequency and duration, and establishment of riparian habitat;
- Install substantial levee setbacks (on the order of hundreds or thousands of feet) to allow for lateral channel migration and natural fluvial disturbance;
- Set levees back along selected river corridors, and remove or breach levees that plan proponents say would be rendered nonfunctional;
- Create and expand new floodway bypasses to increase floodplain habitat and redirect flood flows along distributary channel networks into the estuary;
- Modify channel geometry in unconfined channel reaches or along channels where levees are set back with the stated purpose of creating backwater fish habitat;
- Selectively grade restored floodplain surfaces to provide for drainage of overbank flood waters with the stated purpose of minimizing fish stranding;
- Lower the elevation of restored floodplain surfaces or modify river channel morphology with the stated purpose of increasing inundation frequency and duration, and of establishing elevations suitable for the establishment of riparian vegetation by either active planting or natural establishment;
- Continue to farm in the floodplain, using crop types that benefit fish species;
- Where farming is no longer feasible or compatible with floodplain habitat goals, discontinue farming within setback levees and allow establishment of riparian vegetation on the floodplain; and

CM6 – Channel Margin Enhancement

CM6 would alter 20 miles of channel margin along fish migration corridors, with the stated purpose of improving channel geometry and restoring riparian, marsh, and mudflat habitats on the river side of levees. According to plan proponents, channel margin enhancement associated with federal project levees will not be implemented on the levee, but rather on benches to the water-ward side of such levees and flood conveyance will be maintained as designed.

As proposed, CM6 would require project proponents to:

- Construct a shallow gradient from lower-elevation, submerged, shallow benches along existing river channels to higher elevation riparian habitat;
- Modify or set back levees to create low benches with variable surface elevations with the stated purpose of creating hydrodynamic complexity to support emergent vegetation;
- Modify the waterward side of levees or set back levees landward to create low floodplain benches;
- Install large woody debris (tree trunks, logs, and stumps) into constructed benches with the stated purpose of providing physical complexity;
- Plant vegetation on constructed benches and potentially on mudflat habitat, which the plan proponents say will depending on elevation and location;

CM7 – Riparian Restoration (5,000 acres)

CM-7 is intended to operate in association with the tidal, floodplain, and channel margin habitat measures (CM4-6) to provide mid- and late-successional state vegetation structure

As proposed, CM7 would require project proponents to:

- Restore approximately 3,000 acres of riparian restoration along restored (altered) floodplains with a diversity of native plants and sizes, including elderberry, with the stated intent of creating a well-developed understory of dense shrubs as well as high-canopy overstory; and
- Site mature riparian in areas that are rarely flooded such as above the 50-year floodplain

CM8 – Grasslands Restoration (2,000 acres zones 1, 8 and/or 11)

As proposed, CM8 would require project proponents to restore grasslands in association with the tidal, floodplain, and channel margin habitat measures (CM4-6 and CM10)

CM9 – Seasonal Wetlands and Vernal Pool Restoration (72/67 acres, respectively)

CM-9 proposes to restore seasonal wetlands and vernal pools in association with the tidal, floodplain, and channel margin habitat measures (CM4-6 and CM10). Additionally, "1.0 wetted acre" of vernal pools will be restored for each wetted acre to offset loss of wetland features

As proposed, CM9 would require project proponents to:

- Excavate or re-contour historical vernal pools and swales to natural bathymetry
- Plant "appropriate" vegetation

CM10 – Non-Tidal Marsh Restoration (1,200 acres zones 2, 4 and/or 5)

Non-tidal marshes consist of emergent, tule-dominated vegetation and open water with variable bank slopes.

As proposed, CM10 would require project proponents to:

- Secure sufficient annual water to sustain habitat function;
- Design checks, levees, and other upland sites with sloping banks;
- Establish connectivity with existing irrigation and drainage systems (ag ditches and canals) and with habitats occupied by the giant garter snake;
- Plant native marsh vegetation;
- Grade or create depressions to hold water;
- Irrigate the restoration site, enough to maintain water depths; and
- Grade the site in order to establish an elevation gradient that project proponents state will support both open water and perennial aquatic habitat intermixed with shallower marsh habitat.

CM11 – Natural Communities Enhancement & Management

As proposed, CM11 would require project proponents to:

- Manage vegetation in order to reduce fuel loads for fire;
- Conduct levee maintenance (Section 4.2.3.9.6); levee maintenance will implement measures with the stated purpose of avoiding and minimizing the adverse effect on natural communities and covered species. The project proponents state that levees in the reserve system will be maintained to balance wildlife and habitat needs with the need to maintain structural integrity of levees;
- Specify, in "reserve unit management plans," levee maintenance procedures (how trees and shrubs will grow on faces of levees, encouragement of dense vegetation, rodent control, etc);
- Remove fences;
- Improve culverts and other road crossings;
- Construct and remove roads; and
- Conduct stream and channel bank enhancement

Most of the aforementioned project actions will occur on or adjacent to SRFCP/SPFC project levee and bypass facilities for which the State (CVFPB) has responsibility and liability for maintaining pursuant to the MOU with the federal government (USACE) which transferred the SRFCP flood protection system to the state in 1953.[47]

The BDCP as proposed, depending on the Alternative, would impact multiple SPFC facilities, including the following features identified by the Central Valley Flood Protection Board:

- *Georgiana Slough (Sacramento County);*
- *Sacramento River (From Kenwick Dam –to west end of Sherman Island);*
- *Mokelumne River (Sacramento County, San Joaquin County – to Camanche Reservoir);*
- *San Joaquin River (Friant Dam to West End of Sherman Island);*
- *Sacramento Deep Water Channel (Solano and Yolo);*
- *Sacramento Bypass (Yolo County);*
- *Old River (San Joaquin to Paradise Cut);*
- *Three Mile Slough (Sacramento County);*
- *Sevenmile Slough (Sacramento County);*
- *Threemile Slough (Sacramento County);*
- *Elk Slough (Yolo County);*
- *Duck Slough (Yolo County);*

[47] 953 Memorandum of Understanding (USACE and The Reclamation Board, 1953) and Supplements. Available at ftp://ftp.water.ca.gov/mailout/CVFPB%20Outgoing/Orientation%20Materials/Item%203C%20-%20LM%20Assurance%20Agreements/Example%201%20-%20srfcp_mou_1953%20--%20jsp%20copy.pdf.

- *Miner Slough (Solano County);*
- *Sutter Slough (Counties of Solano, Sacramento, Yolo);*
- *Steamboat Slough (Counties of Solano, Sacramento, Yolo);*
- *Cache Slough (Solano County);*
- *Cache Creek (Yolo County, Yolo Bypass to ½ mile west of Inter-state 5);*
- *Putah Creek (Counties of Yolo, Solano – to Monticello Dam);*
- *Putah Creek, South Fork (Solano County);*
- *Sycamore Slough (Colusa County);*
- *Haas Slough (Solano County);*
- *Hastings Cut (Solano County);*
- *Lindsey Slough (Solano County); and*
- *Shag Slough (Counties of Solano, Yolo)*

RECOMMENDATION – BDCP must develop a and implement a legally enforceable hydraulic mitigation plan to assure hydraulic conditions, such as channel and bypass roughness coefficients, channel width and vegetation maintenance, sufficient to safely pass SPFC flood flows at or below design water surface elevations.

RECOMMENDATION - Based on these substantial and glaring flood protection impact, analysis, and mitigation omissions, we request the BDCP Plan and EIR/EIS be revised to analyze, disclose, and mitigate these flood management impacts and re-circulate to the public for review and comment.[48]

B. CM2 Changes Purpose and Control of Fremont Weir and Yolo Bypass

CM2 proposes to modify the Yolo Bypass, a working flood control facility and one of the SPFC's four relief flood bypasses. It would modify the Bypass by: 1) lowering a portion of the Fremont Weir from 33 feet to 17.5 feet and 2) installing an operable gate. This gate would be managed by BDCP governance entities and via the BDCP's Annual Delta Water Operations Plan.

After the gate is in place, CM2 proposes more frequent inundation (every 1-3 years) of the Yolo Bypass by diverting between 3,000-6,000 cfs for 30-75 days (total of 650,000 af of water) for one or more periods between November and mid-May. As a result, between 11,000 and 27,000 acres would be flooded with shallow water. Vegetation maintenance[49] and sediment

[48] PRC Section 21092.1 and Guidelines Section 15088.5 require an EIR to be re-circulated whenever significant new information has been added to the EIR after the draft has been available for review, but prior to certification of the final EIR. Correction of these omissions and providing the required analysis, disclosure, and mitigation would constitute significant new information.

[49] CM2 proposes to clear vegetation in strips to open areas for water flow and avoid islands, including the pruning of trees with over 4 inches of trunk diameter up 6feet from the ground.

maintenance[50] will also be conducted at the site. As part of the proposal, sediment may be disposed on properties in the immediate vicinity of Fremont Weir, may be used as source material for levee or restoration projects, or will be otherwise "beneficially" used, according to plan proponents.[51]

The proposed vegetation growth in the Yolo Bypass could accelerate and reduce the flood flow capacity, similar to what has happened in the neighboring Sutter Bypass from the permitted encroachment of a federal wildlife refuge. The riparian forest that has evolved over time is diminishing its flood protection effectiveness, according to recent modeling and report commissioned by the CVFPB.[52]

Modification of the Yolo Bypass, which accommodates 80 percent of the Sacramento River's flows during a flood event, represents a major alteration of the location and configuration of this key flood facility. Additionally, the fact that inundation of the bypass be determined and controlled by DWR, USBR, and CVP/SWP water contractors in order to comply with ESA Biological Opinions for continued operation of the State and Federal water conveyance projects also represents a significant change in purpose and use of this SPFC facility.

RECOMMENDATION – BDCP must develop and implement a legally enforceable hydraulic mitigation plan to assure hydraulic conditions, such as channel and bypass roughness coefficients, channel width and vegetation maintenance, sufficient to safely pass SPFC flood flows at or below design water surface elevations.

RECOMMENDATION – Identify the extent and costs to acquire, administer, and maintain additional easements for anticipated flooding for purposes other than flood management within the Yolo Bypass and Cache Slough region.

RECOMMENDATION – To ensure that flood management remains a priority for the Yolo Bypass, the BDCP Plan Governance Chapter 7 must be amended to include the USACE among the BDCP governance entities controlling the operation of the new CM2 Fremont Weir diversion gate, including the Real-Time Operations Team and Authorized Entity Group. Further, the BDCP Plan Governance Chapter 7 must be amended to include the Central Valley Flood Protection Board on the Authorized Entities Group.

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[50] CM2 also would remove about 1 million cubic yards of sediment within 1 mile of the weir about every 5 years, and to remove an additional 1 million cubic yards every other year inside the new channel.
[51] Plan Chap 4, Section 4.2.2.
[52] CH2M Hill for California Department of Water Resources, Sutter Bypass RMA2 Model Report at 5-16 (June 2012) ("Results indicate that increased growth of vegetation in the Sutter Bypass and Yolo Bypass....would raise water levels by up to 0.83 foot for the 1957 design flow conditions.")

RECOMMENDATION –An endowment fund must be established to fund the vegetation maintenance and sedimentation removal, and any other mitigation necessary a roughness coefficient that meets USACE, FEMA, and CVFPB standards at the Fremont Weir or Yolo Bypass. Additionally, the BDCP Annual Work Plan and Budget, Sec. 6.3.1 must be amended to include sufficient annual funding to perform all necessary removal and management of sediment and vegetation in the Yolo Bypass to meet or exceed current conditions required for management of flood flows.

RECOMMENDATION – The Project Description of CM2 in the Plan must be amended to clarify that DWR and USBR will petition the SWRCB to change points of diversion, places of use, and purposes of use of water for the SWP/CVP projects. Specifically, the proposed CVP/SWP diversion of up to 6,000 cfs through an operable gate to be installed and managed in accordance with the BDCP's Annual Delta Water Operations Plan will require these permits.

RECOMMENDATION – The Project Description of CM2 must specifically disclose the acreage areas in the Yolo Bypass that will require BDCP to purchase additional easements from landowners in order to inundate their property more frequently and for longer periods for a non-flood purpose.

C. Risk of Inverse Condemnation Liability For SPFC Potentially Shared By BDCP Proponents

Numerous projects and actions in the BDCP, particularly CMs 1, 2, and 4 propose to not only alter the "location and configuration" of the SPFC system, but also appear to assume responsibility for the management of operations of the Yolo Bypass through the installation of an operable gate that will be managed under the BDCP's governance structure.[53] As such, the USBR, DWR, the BDCP Proponents, and possibly the other CVP/SWP water contractors may be exposing themselves to *Paterno* inverse condemnation liability. BDCP proponents (and their ratepayers) may share in this liability if – anytime during the 50-year permit – a litigant can show a direct correlation between the failure of an SPFC facility controlled by the Proponents and the resulting damage to people and property.

[53] Described in Chapter 7 of the Plan.

This table is intended to show how the rules applied by the appellate court in *Paterno* could possibly apply to BDCP actions:

Proposed BDCP Conservation Measure	**Relevant and Applicable *Paterno* Rule**
Physical Alterations – BDCP Conservation Measures propose to make the most significant changes to the location and configuration of the SPFC system since the flood control facilities were built. They would essentially build, operate, and maintain flood control facilities for a non-flood purpose – Endangered Species Act mitigation requirement for water supply reliability.	"Damages are disproportionate where "the system, as designed, constructed, operated and maintained, exposed [the plaintiff] to an unreasonable risk of harm."[54] … "The [reasonableness] inquiry should include specific consideration whether the ***location* and *configuration* of the system, and its *purpose*** *to divert the natural flow*, were themselves 'reasonable.'"[55]
Governance Structure – Pursuant to Plan Chapter 7, the BDCP governance structure (Authorized Entities Group -DWR, USBR, and state/federal water contractors covered under the BDCP) will have responsibility for compliance with provisions of the BDCP and regulatory authorizations and wording in BDCP implementation section clearly confirms this transfer of control over CM2's new operable gate and more frequent inundation of the Yolo Bypass will occur: "State of California, through DWR, as the entity that will construct, own, and operate any new diversion and conveyance facilities described in the Plan."	"A public entity is a proper defendant in an action for inverse condemnation if the entity substantially **participated in the planning, approval, construction, or operation of a public project or improvement that proximately caused injury to private property**."[56]
BDCP Implementation Structure – The Authorized Entity Group will provide oversight and direction throughout the 50-year implementation of BDCP: consideration of proposed adaptive management actions; **review and approval of Annual Work Plan and Budget and the Annual Delta Water Operations Plan**, which includes operational diversion facilities on the Fremont Weir and project levees on the Sacramento	"So long as the **plaintiffs can show substantial participation, it is immaterial 'which sovereign holds title or has the responsibility for operation of the project**.'[CITATIONS]"…. "Approval and acceptance by the public agency may be implied by

[54] *Paterno v. State of California*, (2003) 113 Cal. App. 4th 998 at 1016
[55] *Id.* at 1017.
[56] *Id.* at 1029

Proposed BDCP Conservation Measure	Relevant and Applicable *Paterno* Rule
River near Hood.	official acts of dominion or control of the property and by continued use of the improvement by that agency for many years."[57]

Where they assume control over State Plan of Flood Control facilities, governance, and implementation, BDCP Proponents must consider the potential impact of *Paterno* inverse condemnation liability, particularly as part of a comprehensive Cost-Benefit and Socioeconomic Analysis.

Recall that, in Paterno, plantiffs may recover damages where "the system, as designed, constructed, operated and maintained, exposed [the plaintiff] to an unreasonable risk of harm."[58] Key factors for the *Paterno* court in assessing the "reasonableness" of the risk inherent to the state's levee project included the large **size** of the project, the lack of **direct benefit** to the plaintiffs from the project or **control** by the plaintiffs, the **feasibility of lower-risk alternatives**, and the fact that the state **benefitted as a whole** from the decision not to fund the levee improvements that would have prevented the breach.[59]

Applying this "reasonableness" rule to the construction and implementation of projects contained in Conservation Measures 1-22, CVP/SWP Projects generally, or export water contractors more specifically, thus requires examination of the following factors:

- **Size and Benefit:** The BDCP proposes substantial modification of the configuration and location of SPFC system features (CM1, 2, &4) and alters the purpose of the Yolo Bypass to benefit covered species and continued operation of SWP/CVP facilities (CM2).
- **Planning and Operation Control**: The BDCP governance entities will assume responsibility for funding, planning and construction of modifications to SPFC and be responsible for their operation and management over the 50-year permit.
- **Feasible Alternatives**: Feasible alternatives to investments in levee improvements to reduce risk of failure from catastrophic floods and earthquakes such as those discussed in the Central Valley Flood Protection Plan and Delta Protection Commission Economic Sustainability Program would avoid or reduce adverse impacts to the state's flood control system.

[57] *Id.*
[58] *Paterno v. State of California*, (2003) 113 Cal. App. 4th 998 .
[59] *Id.* at 1017; Locklin, 7 Cal 4th at 368-369.

- **Benefit to the state as a whole:** Export Service Areas are intended to benefit by BDCP, while flood risks for people and property in the Plan Area may be increased, but those risks (i.e., 9 cofferdams, levee breaching, SPFC system modifications) have not adequately analyzed, disclosed, or mitigated, because such analysis has been deferred until proponents are actively seeking USACE and CVFPB permits.
- **Foreseeability:** To demonstrate foreseeability, "it is enough to show that the entity was aware of the risk posed by its public improvement and deliberately chose a course of action – or inaction – in the face of that known risk."[60] Here, BDCP Proponents have been made aware of the potential flood risk, in previous and comments submitted herein, and by the Central Valley Flood Protection Board and other comment letters and testimony – so ignorance may not be a justifiable defense in court.

RECOMMENDATION – A comprehensive new Cost-Benefit and Socioeconomic Analysis must be prepared that specifically analyzes the potential future liability damages that could be shared between BDCP proponents and the CVFPB or borne by the BDCP proponents alone as a result of participating in the planning and construction of a substantial alteration of the configuration and operation of a major SPFC facility.

Again, PRC Section 21092.1 and Guidelines Section 15088.5 require an EIR to be re-circulated whenever significant new information has been added to the EIR after the draft has been available for review, but prior to certification of the final EIR. This new analysis will likely result in the addition of significant new information, which would require recirculation of the EIR/EIS.

VI. CM1 CONSTRUCTION ACTIVITIES POSE SUBSTANTIAL CUMULATIVE RISKS FOR LOSS OF LIFE AND PROPERTY

A. CM1's Multiple Cofferdams Restrict Flood Flows And Increase Flood Risk

According to the following wording from the Plan, several encroachments into the Sacramento River and tributary Delta channels associated with the 9-10 year construction of CM1 will occur. The following actions would have serious effects on flood control:

- Construction of cofferdams would impede river flows, cause hydraulic effects, and increase water surface elevations upstream.[61]
- Water surface elevations upstream of the cofferdams could increase under flood flow conditions by approximately 0.5 foot relative to EC and NAA.[62] This may require

[60] Arreola v. County of Monterey, (2002) 99 Cal. App. 4th 722 at 744 (cited in *Paterno*)
[61] EIR/EIS Surface Water Chap 6, page 6-102, lines 37-39.

installation of setback levees or other measures to prevent unacceptable increases in river water surface elevations under flood-flow conditions, reverse flow areas, high velocity areas causing scour and erosion, and reflection of flood waves toward other levees. [63]

- Three cofferdams are proposed to be installed at each intake location, ranging from 740-2,440 feet in length, and would extend into the Sacramento River up to 120-feet, including a 25-foot buffer zone around each cofferdam. The river is about 700 feet wide near these intakes, leaving just 380-580 feet open to boat passage.[64] Upon removal of cofferdams, between 2.7-4.0 acres (12.1 acres total) of the riverbed in front of intakes will be dredged (total dredge volumes not yet determined).[65] Import 2,800 cubic yards riprap and place around cofferdams .[66]
- At least six cofferdams at river barge unloading facilities/docks for the delivery of construction materials (e.g., tunnel segments, batched concrete, major equipment) will be constructed located at: 1) State Route 160 west of Walnut Grove; 2) Tyler Island; 3) Bacon Island; 4) Woodward Island; 5) Victoria Island; and 6) Venice Island.[67]

The EIR/EIS completely fails to provide any disclosure, analysis, or mitigation of the public safety dangers created by the increased flood risks from higher surface water elevations caused by nine or10 cofferdams being concurrently constructed and in the Sacramento River and channels during the 9-10 year construction of CM1:

- Construction of cofferdams would impede river flows, cause hydraulic effects, and increase water surface elevations upstream.[68]
- Water surface elevations upstream of the cofferdams could increase under flood flow conditions by approximately 0.5 foot relative to EC and NAA, which may require installation of setback levees or other measures to prevent unacceptable increases in river water surface elevations under flood-flow conditions, reverse flow areas, high velocity areas causing scour and erosion, and reflection of flood waves towards other levees.[69]
- Coffer dams would be forced to tie into existing levees, creating additional risk to the levee due to potential construction impacts from various weight loading issues.

Instead of directly analyzing and disclosing the flood risk impacts from having nine cofferdams in the Sacramento River and tributaries for 4-6 years, the EIR/EIS defers these key analyses and

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[62] 0.5 feet may not seem significant, but according to a 1992 Army Corps study, it represents the difference between a 50-year flood and 100-year flood at the Sacramento River at Snodgrass Slough.
[63] EIR/EIS, Surface Water Chap 6, page 6-58.
[64] EIR/EIS, Recreation Chap, page 15-262, lines 1-7.
[65] EIR/EIS, Chap 4, page 4-7
[66] EIR/EIS, Appendix 3C
[67] EIR/EIS, Chap 4, page 4-11.
[68] EIR/EIS Surface Water Chap 6, page 6-102, lines 37-39
[69] EIR/EIS, Surface Water Chap 6, page 6-58.

disclosures by saying these matters will be addressed when the BDCP seeks approval of permits from the USACE and CVFPB. This omission is glaring and unacceptable under CEQA or NEPA standards. The amount of reduced flood flow capacity is significant. The three new intakes alone will occupy a total of 7.5 acres of the Sacramento River between river miles 37 and 41, leaving only about 380-580 feet open for flood flows in this four-mile stretch during the 4-6 year construction period.

Any intent to defer the hydraulic modeling and analysis until seeking permits from the USACE and CVFPB prevents disclosure to the public of the increased flood risks that such construction elements pose or the physical land impacts that are required to mitigate so is flood-neutral. The EIR/EIS assumes there will be no reduction in flood capacity because both of the permitting agencies will require the project to be flood-neutral and will therefore require mitigations such as setting back the levees on the other side of the river.

The setback of levees is no small undertaking, but once again the EIR/EIS fails to identify the Westside levee as a SPFC Project Levee or analyze how this change in location and configuration affects the SPFC as a functioning system. In some cases, setback levees can themselves alter the flood flows, creating additional impacts that must be mitigated by project proponents.[70]

In addition to requiring the moving of a county road and removal of homes and businesses, setting back levees on as mitigation for CM1 cofferdams could include seepage berms, relief wells, and cutoff (slurry) walls. The seepage berms involve the placement of new dirt on the land side (require more condemned land) of the levee to minimize the influence of water seeping from the River underneath the existing levee, which can undermine the levee stability. The relief wells also remove water from beneath the levee foundation during elevated river stages. Cutoff (slurry) walls are low-permeability walls constructed within the levee embankment to reduce the seepage of water under the levee.

These actions are obviously expensive and have their own set of environmental impacts that will also have to be mitigated – thus, in effect, CM1 cofferdams will require mitigation for the mitigation measure. Yet, none of these additional environmental impacts are disclosed in the EIR/EIS, nor is the financial costs of this likely cofferdam mitigation since there are not many other mitigation options to offset the 4-6 year flood flow impact.

Glossing over the setback of the Westside levees represents a significant omission of environmental impacts, because such an action would require the condemnation of significant

[70] *See, e.g.*, DWR, Sutter Bypass RMA2 Model Report (Construction of setback levees not recommended because"Model results indicate that although peak water levels in the Feather River are reduced significantly by the setback levee, water levels in the Sutter Bypass increased as a result of the revised levee configuration.")

number of acres, houses and businesses. Clarksburg, which sits directly across from one of the intake locations, will face the largest impact. Permanent crops and county roads will also be affected, causing even greater disruptions to agriculture and transportation than those disclosed in Chapters 14 and 19 of the EIR/EIS. Deferral of impact analysis is not allowed under CEQA or NEPA, and prevents CM1 from meeting the standards of Project Level analysis.

Both the increased flood risks created by in-water cofferdams in 9-10 different locations and the potential of moving (setting back) of SRFCP levees across from CM1 facilities also requires a cumulative flood risk assessment now so the public can offer mitigations to reduce impacts such as: build only one intake at a time which will also reduce the number of barges built at one time.

RECOMMENDATION – The EIR/EIS must analyze and disclose the impacts of nine cofferdams blocking flood flows in the Sacramento River and tributaries for 4-6 years, including analysis of mitigations to offset the cofferdam impacts on the natural resource and human impacts covered in Chapters 5-30. PRC Section 21092.1 and Guidelines Section 15088.5 require an EIR to be re-circulated whenever significant new information has been added to the EIR after the draft has been available for review, but prior to certification of the final EIR. Correction of these omissions and providing the required analysis, disclosure, and mitigation would constitute significant new information.

RECOMMENDATION – In Plan Chapter 8, revise the BDCP budget amounts to reflect the costs associated with the CM1 cofferdam mitigations such as setback levees on the West side of the Sacramento River and the costs of the necessary "mitigation" for those setback levee mitigations.

B. CM1 Prevents And Disrupts Levee Inspections, Maintenance, And Improvements For A Decade

Local Reclamation Districts (RDs) are responsible for daily inspection of levee conditions for issues such as cracks, slippage, encroachments, seepage, burrowing animals, etc. In addition, DWR conducts levee inspections twice a year and the USACE conducts more extensive Periodic Inspections every 5 years. The local RD is responsible for performing annual maintenance activities on and around the levees in order to meet USACE and FEMA levee standards. These inspections and maintenance activities will be hindered by any blockage or access issues caused by construction activities.

Over the 10 years of Project construction, local RDs, DWR, and USACE will be unable to conduct levee inspections, conduct levee maintenance or construct repairs or improvements due to competition or blockage by BDCP construction activities. During an emergency, they may not be able to provide floodfighting where they have been denied access to the area or to areas where

they store or stage equipment. In some cases, DWR/BDCP may even need to assume all levee maintenance and floodfighting responsibilities for several reaches of levees . Indeed, where land is consumed by the CM1 construction and facilities and there are not enough remaining landowners to maintain RD functions of levee maintenance and island drainage, DWR and the BDCP may need to operate, maintain, inspect, and floodfight entire districts' levees and other works.

As one specific example of the BDCP's impact on local agencies' ability to inspect, maintain, improve, or floodfight SPFC levees, consider the significant increase in 24/7 truck traffic on levee roads and roads near levees, as identified in EIR/EIS Chapter 19 Transportation. This increased wear and tear on the Project levees was not acknowledged or analyzed, but neither was the fact that it will be near impossible to conduct any inspection, operations, maintenance or floodfight activity on the 33 levee roads identified with significant increases in traffic volumes.

When the maintenance, inspection, and improvement of the entire length of levees on the islands where CM1 facilities will be built becomes impossible, these levees have a greater chance of failure in the 10-year construction period than they would under existing conditions. This increased levee failure risk was not analyzed in the EIR/EIS. Any interference with levee inspections or maintenance exposes SWP and CVP to liability if, as a result, the levee loses its current levee rating by USACE or FEMA. *Where the levee loses status, the BDCP and/or the state gains new liability associated with the change in status and any resulting impacts to the landowners protected by that levee.* Local landowners, the State, or local governments should not bear any financial responsibility for floodfighting and recovery costs not covered by Federal government if CM1 construction causes portions of the Project levees in the Plan Area to lose their PL 84-99 eligibility for 10 years.

RECOMMENDATION – BDCP consultants must immediately begin engaging local RDs, the CVFPB, DWR's levee inspection branch, and USACE to negotiate a memorandum of agreement (MOA) between these entities as to how levee inspections and annual levee maintenance to be performed during the 10-year construction of CM 1 amid the BDCP's planned staging of construction equipment, construction traffic, and/or road re-routing.

RECOMMENDATION –The EIR/EIS must be revised to analyze, disclose, and mitigate the CM1 construction impacts that impede access of levees to RD's, DWR levee inspectors, or USACE for inspection, maintenance, and improvements.

RECOMMENDATION – The Plan and EIR/EIS must explicitly state that BDCP will assume all financial responsibility for floodfighting and recovery costs associated with SPFC Project levee failures and landside flooding damages for areas that lose PL 84-99 eligibility due to inability to inspect, maintain, or repair levees during 10-year CM1 construction. PRC Section

21092.1 and Guidelines Section 15088.5 require an EIR to be re-circulated whenever significant new information has been added to the EIR after the draft has been available for review, but prior to certification of the final EIR. Assumption of these new costs likely would constitute significant new information, and thus the EIR/EIS should be recirculated.

C. CM 1 Disrupts Drainage And Dewatering Discharges Increase Flood Risks

Alternative 4 would involve extensive excavation, grading, stockpiling, soil compaction, and dewatering, resulting in temporary and long-term alteration and disruption of drainage patterns, paths, and facilities. In turn, this would cause changes in drainage flow rates, directions, and velocities. Additionally, the construction of cofferdams would impede river flows, alter hydraulic effects, and increase water surface elevations upstream that could create scour and erosion impacts to SPFC facilities that would require mitigation such as placement of rip-rap or appropriate dispersion methods. Increased water volumes from 24/7 dewatering discharged into either the drainage infrastructure or rivers and waterways with increased elevations will be an adverse impact.

The *Water Surface Chapter* fails to acknowledge that in the Delta reclamation district canals and ditches often function as both water supply and drainage conveyance facilities. Canals and ditches are typically kept at low water levels during the drainage season, and are pumped out by the reclamation districts to remove drainage and stormwater. During the crop irrigation season, water is diverted from tributaries into water supply ditches and irrigation drainage water is captured in the canals and ditches and reused in subsequent irrigation. Therefore, any disconnection or blocking of canals/ditches or other infrastructure used for drainage will also have an impact on the delivery of irrigation water to crops, and thus will need to be disclosed, analyzed, and mitigated in the *Agricultural Resources Chapter*.

We also are concerned about the amount of erosion and scour that can occur depending on the velocities and volumes of water being discharged into earthen irrigation and drainage canals from dewatering activities.

In addition, the water quality from dewatering discharges may not be suitable for agricultural irrigation, yet this potential adverse impact was not discussed or mitigated in either the *Water Supply* or *Agricultural Resources* Chapters of the EIR/EIS.

The drainage systems that currently exist on Delta islands, including those where CM1 conveyance facilities will be built, are critical features that are needed to keep the land behind the levees reclaimed for agricultural production. The importance of a functioning drainage system to agricultural activities is pointed out in the EIR/EIS Groundwater Chapter:

"Maintaining groundwater levels below crop rooting zones is critical for successful agriculture, especially for islands that lie below sea level, and many *farmers rely on an intricate network of drainage ditches and pumps to maintain groundwater levels of about 3 to 6 feet below ground surface*. The accumulated agricultural drainage is pumped through or over the levees and discharged into adjoining streams and canal (U.S. Geological Survey 2000a). *Without this drainage system, the islands would become flooded."* [Emphasis added.]

As stated in the EIR/EIS Groundwater Chapter 7, the existing drainage facilities in the Plan Area are "intricate networks" of canals, ditches, pipes, and pumps which means they have been carefully designed to function as a system and located to work with gravity and the natural land contours and drainage patterns that exist on the Delta islands. Therefore, any disconnection potentially renders the whole system inoperable. Because Chapter 7 further confirms that successful agriculture is dependent on the operation of this drainage system and clearly states the islands will become flooded without the drainage systems functioning properly, the seepage, runoff, and dewatering discharges during CM1 construction are significant and adverse impacts to the ongoing flood maintenance responsibilities or RDs and to agricultural productivity of lands.

Lack Of Supporting Evidence

We could find no analysis, appendices, or technical reports in the EIR/EIS chapters we reviewed that discussed, evaluated, or considered: 1) Existing maps of the island drainage systems, where and for how long disconnections of these systems will occur, and how these actions will affect the functionality of the rest of the drainage system to prevent localized flooding of entire island's population, structures, and farmland;[71] 2) Specific repair/reconstruction options to avoid/fix the disconnected drainage systems; 3) Identification of lands and land uses that will be adversely affected by localized flooding; 5) Disclosing the nature and extent of any of these impacts.

In accordance with CEQA/NEPA, the conclusions in the EIR/EIS must be supported by substantial evidence – actual facts. They can be reasonable assumptions or expert opinions – but they must still be predicated and backed up by facts. Speculation does not constitute substantial evidence, nor does unsubstantiated narrative or expert opinion.[72] Unfortunately, every EIR/EIS chapter we reviewed relied on conjecture and speculation rather than empirical evidence or scientific and technical analyses in determining conclusions on adverse impacts and development of mitigation measures.

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[71] As stated previously, drainage maps are readily available at DWR

[72] See, e.g., *Preserve Wild Santee*, 210 Cal.App.4th at pp. 275-276 ("Substantial evidence for CEQA purposes … includes 'facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.' [Citation.] It does not include argument, speculation, unsubstantiated opinion or narrative, clearly erroneous or inaccurate evidence, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment.")

Neither the Plan Project Description of CM1 nor the EIR/EIS *Surface Water Chapter* contain adequate descriptions of the existing baseline conditions that were used to determine the current drainage patterns on the islands where CM1 facilities will be constructed, existing hydraulic characteristics of the waterways, surface runoff characteristics or where direct and indirect impacts will in fact occur. Without an adequate baselines, the local reclamation district responsible for island drainage cannot assess the validity and accuracy of impact conclusions made in the EIR/EIS, let alone the efficacy of the proposed mitigations.

Therefore, the purported impacts in the EIR/EIS appear to be mere conjecture, lacking in factual evidence to support CEQA/NEPA conclusions or mitigations. They likely underestimate the true nature and severity of the seepage and surface flooding impacts that CM1 construction will create.

An example of where more details regarding the analysis conducted to reach Impact conclusions and develop Mitigation Measures is *Chapter 6 Surface Waters* indicating the removal of groundwater during CM1 dewatering activities, occurring for several years, will be discharged to local drainage infrastructure or directly to the rivers and sloughs, resulting in a localized increase in flows and water surface elevations in receiving channels. Passing reference is made, but few details are provided, regarding dispersion facilities being used to reduce the potential for channel erosion due to discharge of dewatering flows. One or more of the Impacts in this chapter also indicate the BDCP will design the dewatering system to avoid significant surface water quality and flow impacts, to meet USACE hydraulic neutrality requirements, and to maintain access for maintenance and flood-fighting purposes, but is vague, lacking in any specific details.

Knowing the dewatering discharge amounts and velocities is critical for the reclamation districts to determine if the design or dispersal facilities being proposed by BDCP will be effective in reducing the level of adverse impacts. We are extremely concerned by the repeated assumptions throughout all EIR/EIS chapters we reviewed that all the mitigation measures will be fully implemented and that the measures will in fact work to avoid or substantially reduce the significance of the adverse impacts, without any evidentiary support in the record to substantiate their veracity. The EIR/EIS additionally fails to account for and analyze adverse environmental impacts that will occur if the flood management or irrigation supply mitigation measures are not implemented or not working in terms of reducing the adverse effects of CM1 construction.

Another example in *Chapter 6 Surface Water* is the description of Alt 4 excavation, grading, stockpiling, soil compaction, and dewatering activities that would result in temporary and long-term changes to drainage patterns, drainage paths, and facilities that would in turn cause changes in drainage flow rates, directions, and velocities. The impacts to reduced flood flow capacity that will occur are therefore assumed, but there is no technical analysis provided with supporting evidence on the details on the specific location, timing, volumes, velocities, or extent of these

effects on local flood management facilities or expected localized surface flooding expected to occur. This level of information is necessary to meet Project Level Analysis standards and to provide reclamation districts and landowners the details to determine the severity of the impacts and suggest appropriate mitigations to reduce the level of significance.

Existing Drainage Capacity

In summary, the EIR/EIS fundamentally fails to provide a Project Level Analysis of CM1 because it is missing the following elements necessary to assess the validity and accuracy of Impact conclusions and proposed Mitigation Measures:

- Examine existing conditions in terms of interconnected drainage systems and whether CM1 construction will disconnect or disrupt the existing drainage facilities' ability to function/drain effectively;
- Identify specific discharge locations, how many locations, the capacity of the discharge location or what its capacity availability is based on local usage/needs (winter drainage or summer irrigation)
- Quantify the daily discharge rates and volumes from CM1 dewatering;
- Identify how long dewatering and subsequent discharges will occur at each location;
- Identify and analyze the additional drainage maintenance works and costs BDCP will need to assume in order to keep the drainage facilities functioning and able to accommodate the increased dewatering discharges.

Major Omissions

In areas of construction and or storage, the EIR/EIS fails to provide a description, maps, analysis, or mitigation solution to re-plumbing the extensive on-island drainage and irrigation systems that include pumps, pipes, canals, ditches, retention ponds, etc. that both protect the lands/property from surface flooding, but also provide access to water supply. Each RD has maps of the drainage systems and each will need to be consulted with regarding the best way to re-design in order to work with the island elevations and BDCP must pay for these new systems, their additional energy costs for pumping, and annual maintenance. BDCP will need to consult with the individual remaining farmers who are not eminent domained to find out where and how their irrigation facilities need to be re-built at full cost by BDCP.

Fails to define "temporary" or "long-term" or what "changes" means in terms of specific locations of "changes", type of "change" (disconnect, overwhelm, reroute, destroy/eliminate, redirected impacts??), who will be impacted by these "changes," site-specific remedies/fixes, or who will pay the cost to fix damage/destruction/disconnection to existing facilities that constitute

an inter-connected and coordinated drainage system. The EIR/EIS should be more specific about defining "temporary" and "long-term" in this regard.

The EIR/EIS also fails to identify a mitigation measure that will assure proper drainage is occurring during the "temporary" and "long-term" periods and should provide a Mitigation Measure such as BDCP paying to re-route/replace existing drainage system with a new system of pipes, canals, ditches, drainage pumps (including any increased pumping costs to the residents/RDs), et al that will keep the island properly drained to prevent localized flooding and allow productive agricultural activities to continues.

The EIR/EIS additionally fails to identify a mitigation measure to reduce to a level of insignificance of the reduced flood capacity in the Sacramento River to handle additional dewatering discharge volumes, changes in water flow direction and velocities, and increased water surface elevations upstream of the North Delta intakes resulting from the placement of cofferdams in the river that may also create additional erosion and scour of SPFC facilities.

RECOMMENDATION – Consistent with NEPA §1502.14, BDCP Consultants must conduct a more rigorous and robust Project Level Analysis of CM1 seepage, drainage, and general surface flooding impacts in a comparative form that sharply defines the issues. The specific items related to drainage issues that need more in depth evaluation and technical analysis provided in the EIR/EIS include: 1) localized flooding of homes/businesses and farmland that is exacerbated by the increase in runoff associated with the discharge of water from dewatering activities into local drainages (Impact SW-6); 2) capacity of rivers and other waterways to handle the increased flows and water surface elevations created by CM1 dewatering discharges; 3) increased costs to local landowners and reclamation districts to re-design and re-construct a functioning drainage system; 4) increased pumping costs to local landowners and reclamation districts to install bigger pumps to drain the additional water from CM1 dewatering activities.

RECOMMENDATION – BDCP consultants also must prepare a new Impact specific to disclosing and mitigating the impacts on the disruption, disconnection, and overall functionality of the existing drainage systems located adjacent or nearby any CM1 construction activities. Provide the technical analysis that evaluates the effects on drainage system performance, stream courses, and runoff to increased seepage and surface flooding in the Plan Area.

RECOMMENDATION – BDCP consultants also must prepare a new disclosure and mitigation section that better addresses the drainage and dewatering discharge capacity problems affecting flood management that are created by CM1 construction.

RECOMMENDATION – SW-4 must be revised to only disclose impacts from stormwater runoff on paved areas and increased sedimentation, and develop specific mitigations that actually offset runoff and sediment.

RECOMMENDATION – A new Mitigation Measure must be added to the *Surface Water Chapter* prohibiting dewatering discharges into existing drainage and irrigation facilities and require them to instead be directly discharged into the Sacramento River so that farming and reclamation of the islands can be sustained through the 10-year construction of CM1.

RECOMMENDATION – Analyze, disclose, and mitigate the impacts from dewatering discharges degrading the water quality and rendering it unsuitable for farming in the EIR/EIS Chapters on Water Supply and Agricultural Resources.

RECOMMENDATION – Add a new Mitigation Measure requiring BDCP to pay the full cost of re-designing and constructing a new interconnected drainage and irrigation systems to keep affected Delta islands reclaimed for farming and local water supply available to irrigate crops. Each RD has maps of the drainage systems, and each will need to be consulted with regarding the best way to re-design in order to work with the island elevations and BDCP must pay for these new systems, their additional energy costs for pumping, and annual maintenance. BDCP will need to consult with the individual remaining farmers have land not condemned for construction of CM1 to find out where and how their irrigation facilities need to be re-built at full cost by BDCP.

RECOMMENDATION – Identify in the EIR/EIS *Surface Water Chapter* a specific mitigation measure for BDCP to pay the costs to re-route/replace existing drainage system with a new system of pipes, canals, ditches, drainage pumps and the increased pumping costs to the residents/RDs for more pumping required to remove dewatering discharges.

RECOMMENDATION – Correct a mitigation omission in the EIR/EIS *Surface Water Chapter* by identifying a specific mitigation measure to remediate increased flood risks in the Sacramento River created by sediment loading and water discharges from CM1 dewatering activities. The mitigation measure needs to address the changes in water flow direction, velocities, volumes, and increased water surface elevations occurring as a result of multiple cofferdams in the Sacramento River for several years. Mitigation should specify that before more stress/increases in peak flows can be added to the Sacramento River or tributaries, BDCP will need to pay for actions to improve the current flood capacity in some channels and reaches prior to CM1 construction.

RECOMMENDATION – To address pavement stormwater runoff impacts, mitigation needs to be offered pay for and install onsite drainage systems (e.g., new cross drainage

facilities/detention facilities) and prepare a drainage study for each individual CM1 construction location.

D. CM1 Dewatering Increases Extent and Severity of Delta Subsidence

Primarily limited to interior portions of the Central Delta, land subsidence has slowed in recent years in the Delta, which has allowed landowners and reclamation districts to keep pace with it and manage it over time. [73] However, the EIR/EIS Chapters on *Geology* and *Soils* descibes a severe reversal of this process, with CM1 potentially increasing Delta subsidence and sinkholes as a result of the widespread and intensive dewatering that will occur during the 6-10 year construction period for the three intakes, tunnels, shafts, sedimentation basins, pipelines, pumping stations, and other Project facilities.

Extensive and Intensive Around-the-Clock Dewatering

- Because of high groundwater levels dewatering will take place 7 days a week, 24 hours per day, and continue until excavation is completed and sites are protected from groundwater levels at all intake and pumping plant sites and where intake pipelines cross waterways and major irrigation canals east of Sacramento River. Conveyance pipeline between Intake 3 and intermediate forebay crosses five canals or ditches.[74]
- Dewatering wells would generally be placed every 50-75 feet apart along the construction perimeter of conveyance facilities, 75-300 feet deep, each pumping 30-100 gpm, 24 hours per day, 7 days a week. Tunnel shaft dewatering is 300 feet deep and 75 feet for open trench construction. Dewatering along the alignment ranges from approx. 240 to 10,500 gpm.[75]
- Dewatering activities in the vicinity of North Delta intake pump stations and Byron Tract Forebay would lower groundwater levels by up to 10 feet and 20 feet, respectively.[76]
- The horizontal distance from boundary of excavation locations where forecasted groundwater levels are 5-feet or more below the static groundwater level is defined as the "radius of influence" which is forecasted to extend approx. 2,600-feet.[77]

With dewatering pumps placed every 50 to 75 feet around the entire perimeter of all the CM1 facilities under construction, with each pumping between 240 to 10,500 gallons per minute, the EIR/EIS estimates the groundwater will be lowered 10-20 feet for a 2,600-foot radius from each

[73] The Association can provide LiDar maps that plot the slowing subsidence if necessary.
[74] EIR/EIS, Recreation Chap, page 15-253, lines 26-36
[75] EIR/EIS, Groundwater, page 7-46.
[76] EIR/EIS, Agriculture Resources Chap, page 14-120
[77] EIR/EIS, Groundwater, page 7-46

pump. However, we could find no studies or references to any evidence to support how the lowered groundwater depth or the radius of influence were determined, so they appear to be nothing more than professional guesstimates without any factual surveys or technical analysis to verify these claims.

As the Soils and Geology Chapters indicate below, this amount of dewatering has the potential to destabilize the soils, resulting in sink holes and subsidence in a large area in the North Delta where the intakes and forebay with connecting pipelines will be built as well as the length of the 34-mile-long tunnels. Again, we could find no technical appendices, references to studies, or any other evidence to support these claims, so the severity of the impacts could in fact be much greater than that described in the EIR/EIS.

CM1 Created Land Subsidence and Sink Holes

- Impact GEO-2: Settlement of conveyance excavations could occur as a result of dewatering (70% occurs at all intake locations and pumping plants). Similar dewatering may be necessary where intake and forebay pipelines cross waterways and major irrigation canals east of the Sacramento River and north of the proposed intermediate forebay.[78]
- Dewatering can stimulate settlement in excavation and tunneling sites, could result in collapse at construction sites.[79]
- Soils such as peat or muck, found along Alt 4 alignment, present a risk to infrastructure due to high compressibility and poor bearing capacity, making them subject to subsidence and differential settlement. Such effects could occur at the five intakes, all pumping plants, and sedimentation basins. Collapse of these facilities could cause an interruption in water supply.[80]
- Forebay levees and interior could be subject to appreciable subsidence. Damage to other conveyance facilities, such as intakes, transition and control structures, and pumping plants, caused by settlement could be substantial, causing failure.[81]

In addition to failing to provide any comparison of existing conditions to the affects of the extensive amount of 24/7 dewatering proposed under CM1, the EIR/EIS completely failed to disclose or analyze the disruption to existing Delta island drainage and irrigation systems that will occur if they subside significantly or collapse in a sink hole. As previously described in prior comment, such damage to the existing interconnected drainage and irrigation systems will

[78] EIR/EIS Geology Chap, page 9-56, lines 30-31
[79] EIR/EIS Geology Chap, page 9-57, lines 1-3
[80] EIR/EIS Soils Chap, page 10-95 and 10-96, lines 3-9
[81] EIR/EIS Soils Chap, page 10-92, lines 15-28

have additional adverse impacts on agricultural water supply and seepage to crops than currently identified in *Chapter 14 Agricultural Resources* and Chapter 5 Water Supply as well as more widespread localized flooding than reported in *Chapter 6 Surface Water* if drainage systems cannot perform as designed and built. These additional impacts need to be analyzed, disclosed, and mitigated. The Association would content that this additional analysis may constitute "new information" and therefore require recirculation for public review and comment.[82]

Finally, the reclamation districts and landowners require much more information of existing conditions and details regarding the locations, number and size of pumps, amount of water being removed, timing, etc. in order to compare how and where natural resources and human environment will be affected and to what extent.

RECOMMENDATION – The EIR/EIS *Groundwater Chapter* must provide a map indicating the perimeter areas dewatering pumps will be located, the approximate location and number of pumps, the power in gallons per minute of the pumps, showing the 2,600-foot radius of influence as well as the approximate changes in groundwater elevations expected in areas affected.

RECOMMENDATION – The BDCP must provide the technical studies, reports, evaluations, and analysis that was used or conducted to arrive at the conclusion in the EIR/EIS *Geology* and *Soils* Chapters that CM1 construction dewatering activities may stimulate settlement in construction excavation and tunneling sites. This supporting technical evidence should include a comparison against the current baseline conditions and provide more details on the scope, nature, locations, and intensity of the subsidence and land settlement effects expected based on the scientific and technical to be done, as well as identify how many acres are expected to experience subsidence from dewatering.

RECOMMENDATION – Both the *Soils* and *Land Use* Chapters must provide a map indicating how many acres and which specific dewatered areas are most vulnerable to subsiding/sinking, the number of residential and commercial buildings affected, and what crops will be reduced as a result.

RECOMMENDATION – New impacts must be developed and inserted into the EIR/EIS Chapters on *Agricultural Resources, Land Use*, and *Surface Waters* in order to disclose and mitigate the adverse impacts increased subsidence and land settlement caused by dewatering will have on crops, structures such as homes and fruit packing sheds, and the functionality of the existing interconnected drainage and irrigations systems.

RECOMMENDATION – The Surface Water Chapter must be amended to incorporate studies, reports, or technical analyses evaluating land subsidence/sinking effects associated with

[82] PRC Section 21092.1 and Guidelines Section 15088.5

dewatering on levee stability, particularly the potential for liquefaction, and drainage systems. If this analysis indicates "significant" adverse impacts to levees and drainage such as collapse or sinking, then the localized seepage and surface flooding of local infrastructure and crops should be disclosed and mitigated. The chapter should also include a map depicting the levees and drainage facilities (ditches/pipes/canals/pumping stations) that are expected to experience subsidence or liquefaction due to dewatering activities.

RECOMMENDATION – The Land Use Chapter should be amended to include the studies and technical evaluations on the stability of existing residential building and commercial structures, including historical homes and agricultural infrastructure such as packing sheds. The analysis should provide details regarding the number of homes, commercial, and agricultural buildings that are vulnerable to sinking in dewatered areas of in CM1 construction. The analysis should also specifically evaluate potential effects on existing churches, schools, public safety buildings such as fire stations vulnerable to sinking/collapsing in dewatered areas. If this evidence supports a conclusion of "significant" impacts to existing structures then a new Impact and Mitigation Measures should be added to the Land Use Chapter, including the economic and human impacts. Further, the Chapter should incorporate a map depicting locations of buildings in area expected to experience sinkholes or subsidence from pile driving in dewatered areas.

E. CM1 Extensive and Concurrent Pile Driving Affects Levee Stability

Concerns over levee stability and their performance during a seismic event are some of the primary reasons BDCP Proponents state for building the new facilities in CM1. According to them, this concern is so important that reducing seismic risk of SWP/CVP conveyance facilities is stated as one of the Purpose and Needs of the Project. Yet, astonishingly, the EIR/EIS failed to provide any analysis of how intensive and sustained ground-shaking from 700 pile-driver strikes driving in more than 1,000 total piles for construction of the three new North Delta intakes[83] will affect the stability of the nearby levees, including those adjacent to the intake location site, across the river, or even in the nearby vicinity.

These levees were not built to withstand this amount of intense localized vibration for such a long duration as contemplated in the CM1 construction description. This continual pile driving could cause stress fractures and possibly levee failures adjacent to construction locations and neighboring islands. People, property and wildlife would suffer potentially millions of dollars in damages, including the money needed to repair, replace, and rebuild the levees.

[83] Representing a total of 700,000 total pile drive strikes just for the 3 intakes

Ground-Shaking Effects

- The cofferdams are supported by steel sheet piles and/or king piles (heavy H-section piles), which will likely be installed by both impact and vibratory pile drivers.[84]
- Daily noise and vibration from more than 1,000 piles for the intake locations with 8-12 piles installed per day at each intake site; each pile will require approximately 700 strikes each. [85]
- Between 450-800 sheet piles driven from within river by a barge mounted crane for intakes, 551 piles installed for sedimentation basin, 493 piles installed for pump house locations. [86]
- Pile drivers can create vibrations that radiate along the surface and downward into the earth. These surface waves can be felt as ground-borne vibrations that are destructive enough to damage structures.[87].
- Daily noise and vibration from more than 1,000 piles for the intake locations with 8-12 piles installed per day at each intake site, each pile requiring 700 strikes each.[88]
- Between 450-800 sheet piles driven from within river by a barge mounted crane for intakes, 551 piles installed for sedimentation basin, 493 piles installed for pump house locations.[89]
- Barge loading docks will be about 50 by 300 feet and supported by about 32 two-foot diameter piles.[90]
- Soil liquefaction also a function of ground motion intensity and shaking duration. Longer ground shaking may cause liquefaction as the soil is subject to more repeated cycles of loading.[91]

Despite the aforementioned potential effects from pile driving appearing throughout the BDCP Plan and EIR/EIS, we could find no technical analyses, data, or scientific research evaluating how excessive pile driving such as described in CM1 will affect the integrity and stability of the surrounding and nearby levees. Most, if not all, of the levees in the CM1 diversion intake construction area are SPFC Project levees. Failure to conduct a rigorous analysis in accordance

[84] EIR/EIS, Chap 9 Geology and Seismicity, page 9-62, lines 38-41
[85] EIR/EIS, Appendix 3C, page 3C-5 /Which also estimates about 25,000 pile driving strikes per day]
[86] EIR/EIS, Appendix 3C
[87] EIR/EIS, Noise Chap, page 23-4, lines 10-20
[88] EIR/EIS, Appendix 3C, page 3C-5. [Again, an estimated 25,000 pile driving strikes per day]
[89] EIR/EIS, Appendix 3C
[90] EIR/EIS, Chap 4, page 4-11
[91] EIR/EIS Geology and Seismicity Chap, page 9-22, lines 17-19

with NEPA § 1502.13(a) of the potential risk of levee failure and effects on the overall performance of the SPFC in a high water flood event is a glaring and serious omission that needs to be corrected in the EIR/EIS and recirculated for public review and comment.

RECOMMENDATION – Conduct a robust analysis of the potential effects of ground-shaking, and disclose the technical findings to the public with an opportunity to comment. Pursuant to the findings in the analysis, a new impact should be added to the EIR/EIS Surface Water Chapter disclosing the adverse impact on local levee stability and SPFC performance, with particular attention to the timing/duration and level of vibration and stress created by up to 12 pile driving hits occurring simultaneously and repeatedly at locations that are within a four-mile stretch of the Eastside Sacramento River levee. This impact analysis should also include an evaluation of the potential cumulative effects of the pile driving to increase and exacerbate the potential for subsidence and sink holes created from CM1 dewatering activities. If the technical analysis does show that pile driving could increase the likelihood of land subsidence in dewatered areas, then the Impact added to the Surface Water Chapter should also disclose the radius of influence from pile driving that lands are expected to subside. A map should also be provided in the Appendices indicating the zones of increased subsidence and areas where levees are expected to experience stress and vibration that may increase their likelihood of failure.

Because one of the BDCP Project Objectives as stated in Chapter 2 of the Plan is to minimize the potential for major earthquakes that result in levee breaches allowing inundation of salinity to affect water export facilities, then a robust analysis of whether the intensity of sustained pile driving concurrently at a dozen nearby locations equals the magnitude of an earthquake in terms of effects on levee stability and increases potential for failure should be conducted.

RECOMMENDATION – A map must be included in the EIR/EIS Surface Water Chapter depicting the locations of all pile driving for CM1 facilities (including but not limited to intakes, forebays, pipelines, tunnels, shafts, sedimentation basins, barge loading facilities, etc.) and the radius of influence for any related subsidence.

RECOMMENDATION – In the Cumulative Effects section of the EIR/EIS Water Surface Chapter, disclose the combined effects of pile driving and dewatering on reducing levee stability and increasing land subsidence/sink holes in the CM1 construction area. Also indicate whether the cumulative effects result in an "unavoidable significant adverse impact."

RECOMMENDATION – A mitigation measure must be adopted to phase the construction of the new diversion intakes one at a time, instead of building concurrently as proposed in Draft Plan, in order to reduce the risk of levee failure caused by intensive and sustained pile driving and increased subsidence from dewatering.

F. CM1 Heavy Construction Vehicles and Increased Traffic Volumes Significantly Erode Integrity of Local Levees and SPFC

The lack of knowledge of the Plan Area of the consultants drafting the EIR/EIS is particularly evident in the *Transportation Chapter*. First, in the most fundamental disclosure, the chapter fails to acknowledge that most of the roads and highways in the Delta are in fact pavement on top of a levee (both project and non-project levees). Consequently, the transportation study (Appendix 19-A) only analyzed two things: road surface conditions and traffic patterns/volume (level of service) and therefore failed to analyze, disclose impacts, or provide mitigation for the daily wear and tear on levees that the thousands of construction trucks will cause.

As noted by the Central Valley Flood Protection Board's and Delta Stewardship Council's comments on the BDCP, this simple, qualitative traffic analysis provided by the BDCP EIR/EIS will not adequately assess the potential for damage to levees that underlie roads. The Board correctly explains the potential for impacts to the levees themselves, including the possibility of "deformation and crest depression due to non-uniform settlement and damage to levee slopes due to use of levee hinge points for vehicle turn-outs."

The amount of construction truck activity over 10 years discussed in Chapter 19 *Transportation* exceeds the weight and traffic volume that current levees upon which much of the construction trucks will travel over and will degrade them to a point of reducing their stability which could result in a levee failure from CM1 construction activities.

Heavy Construction Trucks on Parade 24/7

During the construction of CM1, local leveed areas and their residents would bear the impacts from:

- Trucks running 24-hours per day, 7-days a week, making eight trips per day, [92] would transport an approximate daily 7,000 cubic yards of muck from tunnel to drying/chemical treatment areas. [93]
- Currently, potential construction site access routes do not have adequate engineered pavement sections to withstand construction traffic, particularly heavy vehicles. [94]

These impacts can occur in any situation where substantial and sustained use of levee roads are utilized to haul construction materials or equipment.

[92] EIR/EIS, Transportation Chap 19, page 19-35
[93] EIR/EIS, Appendix 3C, page 3C-5
[94] EIR/EIS, Transportation Chap 19, page 19-13

The local Reclamation District (RD) is responsible for the regular inspection of levee conditions (cracks, slippage, encroachments, seepage, burrowing animals, etc.) and for performing annual maintenance activities on and around the levees in order to meet USACE and FEMA levee standards. Their efforts will be hindered by any blockage or access issues caused by construction activities and extensive truck traffic. Indeed, the construction activities and extensive truck traffic may lead to a need for more frequent inspections, the cost and manpower requirements of which have not been disclosed, analyzed, or mitigated in the EIS/EIR. The same may apply to the DWR conducted levee inspections twice a year and the USACE conducted more extensive Periodic Inspections every 5 years.

From a public safety standpoint, it is critical for DHCCP consultants to immediately consult with local RDs, the CVFPB, DWR's levee inspection branch, and the USACE to discuss drafting a specific mitigation measure to deal with the effects that staging of construction equipment, construction traffic, and/or road re-routing will have on levee inspections and annual levee maintenance to be performed during the 10-year construction period.

As mentioned in earlier comments, any interference with levee inspections or maintenance exposes SWP and CVP to potential inverse condemnation liability for future failures of SPFC levees in the Plan Area, particularly near any CM1 construction. Construction impacts that impede access of levees to RD's, DWR levee inspectors, or USACE for inspection and maintenance needs to identified and mitigated and compensation to landowners for any flood damage to their property and crops.

Levees underneath local roads were not engineered or built to withstand the excessive weight or traffic volumes indicated in the Plan's construction description of identified in the EIR/EIS "BDCP Construction Traffic Impact Analysis" (Appendix 19-A). According to district engineers who have been responsible for levee maintenance and improvements on these roadways, all of the levees to be used during CM1 construction will need to be stabilized and fortified every spring during all 10 construction years and will need to meet the same level of public safety condition the levee was in prior to implementation of construction at no cost to the local levee maintaining agency, landowners, or county governments once CM1 is completed.

Secondly, when the Association brought this glaring omission to the attention of EIR/EIS consultants, their reply was they had no time to conduct an analysis of the stress and stability impacts construction traffic would have on Project and non-Project levees due to a deadline to release the Public Draft EIR/EIS for public review and comment. The Association asserts that this serious oversight and failure to analyze, disclose, and mitigate such a significant public safety impact will require recirculation of the EIR/EIS once this analysis is conducted.

Finally, in accordance with CEQA (14 CCR 15086(d)), the Association on behalf of member agencies in the Plan Area officially advises the BDCP lead agency that based on the Project and Construction Descriptions provided in the Plan, construction traffic associated with CM1 is expected to have a significant environmental effect on the stability and integrity of Project and non-Project levees underneath many of the roadways identified in the Transportation Chapter and Appendices of the EIR/EIS.

Unfortunately, due to the CM1 Project Description not providing sufficient details in terms of the duration and intensity of expected construction vehicles during the 9-10 year construction period, the RDs cannot currently provide detailed performance objectives for mitigation measures addressing these effects or reference documents concerning specific mitigation. However, we would direct DWR to the CVFPB's regulations, Title 23, for some general guidelines on levee maintenance and restoration to a certain condition that must be followed.

These conditions can be expected for any of the construction activities anticipated in the BDCP if such work involves heavy loads and sustained use of levee roads.
In order for RDs to provide the lead agency with more specific mitigation measures they will need more specific construction and project details such as (but not limited to):

1) A list of which roadways in the Plan Area identified for use during CM1 construction have Project or non-Project levees underneath the road surface;
2) The number of construction vehicles/equipment expected to drive on roadways in the Plan Area with levees underneath;
3) The approximate weight of vehicles expected to frequently drive on roadways in the Plan Area with levees underneath;
4) The approximate start and end date for heavy construction traffic usage;
5) Whether construction traffic will be 24/7 or be limited to certain days and hours;
6) Provide results from studies and analyses conducted that have tested the weight and multiple load tolerance levels of existing levees underneath roadways to be heavily used in CM1 construction.

RECOMMENDATION – Immediately conduct an evaluation of the potential degradation to levees (SPFC project levees and non-project) underneath paved roadways anticipated from CM1 construction traffic volumes and from the cumulative impacts from truck weights experienced 24/7 for 10 years. Once completed, these technical studies and analysis should result in a new Impact being added to the Transportation Chapter disclosing the level of impacts CM1 construction traffic will create on levees that underlie roads in the Plan Area, and provide Mitigation Measures to reduce the impacts. A map should also be added to the chapter depicting

which SPFC Project and non-project levees will be impacted by increased traffic volumes identified in Appendix 19-A.

RECOMMENDATION – Consult immediately with each of the Reclamation District engineers maintaining levees under roads that will be used during CM1 construction (and with the Central Valley Flood Protection Board and the USACE if they are SPFC Project levees) to determine the current structural ability of the levees to accommodate the BDCP construction traffic indicated in this chapter. If, during these consultations with the local RD, the CVFPB, or the USACE it is determined that the existing levee's current geotechnical design CANNOT withstand the amount of truck traffic expected during BDCP construction, then any and all costs associated with increasing the structural integrity of the levee to accommodate BDCP construction traffic must be fully paid for by BDCP at no cost to the local levee maintaining agency (RD), landowners, or county governments.

RECOMMENDATION – Add a specific Mitigation Measure to the EIR/EIS Transportation Chapter that requires annual levee repairs to be conducted each spring, and more often if necessary, depending on the traffic weight and volume. This Mitigation Measure should also require BDCP to execute MOUs with affected RDs regarding the specifications for levee design standards that will be maintained during the 10-year construction period.

RECOMMENDATION – Alter the BDCP's Annual Operations Budget to include funding for repairs of Delta levees (Project and non-Project) damaged by CM1 construction traffic.

G. CM1 Sediment Loading Reduces Channel's Flood Flow Capacity

Multiple activities described in the Conservation Measures and construction description are expected to increase sediment loading and place fill (dirt) in waterways in the Plan Area. Increased sediment amounts in most described areas would result in reduced flood capacity and higher risks of flooding from overtopping.

Because the EIR/EIS has not conducted an evaluation of sediment impacts or analyzed the historical or baseline conditions for affects that sediment as on flood control facilities, it fails to recognize that the amount of in-water dredging the BDCP expects to conduct in order to prevent overloading of sediment is unrealistic and infeasible from a regulatory permitting standpoint. Therefore, the reduction in sediment impacts that the EIR/EIS claims is overly optimistic. More severe impacts to flood flow capacity are likely to occur as a result of the multiple activities expected to increase sediment levels.

Between the Plan and the EIR/EIS, the BDCP is expected to increase sediment loading in the Sacramento River and tributaries at all nine of the cofferdams during construction, the three

intakes during operations (CM1), the Fremont Weir at the new operable gate, in the Yolo Bypass from more frequent inundation (CM2), and from several tidal habitat restoration projects.

The following projects acknowledge potential sediment effects:

CM1 – New Conveyance Facilities

- Placement of at least nine in-water cofferdams in Sac River and several Delta channels for construction of three intakes and six barge loading facilities[95] will result in **increased sediment loading and removal** at intake locations.

CM2 – Fremont Weir Modification & Yolo Bypass Inundation

- **Sediment removal** from Fremont Weir (approximately 1 million cy within 1 mile of weir expected every 5 years); and
- **Sediment removal** inside the new channel (additional 1 million cy every other year);
- **Sediment disposal** on lands in vicinity of Fremont Weir or used as source material for levee improvements.

CM 4-11 – Habitat Creation in 6 ROAs throughout Plan Area[96]

- Grading, excavating, and **placement of fill material (occurs near levees)**.

CM4 – Tidal Habitat Creation (65,000 acres)

- Grading and **fill in some locations; and**
- Based on local hydrodynamic conditions, topography, and **sediment transport** restoration sites may be graded to accelerate development of tidal channels within restored marsh plains. Following introduction of tidal exchange, tidal marsh vegetation will be planted and naturally established in marsh plains

CM5 – Seasonally Inundated Floodplain (10,000 acres additional to Yolo Bypass CM2)

- Remove existing riprap or other bank protection to allow for channel migration between the setback levees through natural **erosion and sedimentation.**

CM6 – Channel Margin Enhancement

- Enhance 20 miles of channel margin along fish migration corridors by improving channel geometry and restoring riparian, marsh, and **mudflat habitats on the river side of levees;**

[95] There could be more cofferdam locations, including Sacramento Weir or locations where operable gates are being installed

[96] Plan Sec. 4.2.3 and Table 4-4

- Construct a shallow gradient from lower-elevation, **submerged, shallow benches along existing river channels** to higher elevation riparian habitat; and
- Modifying or setting back levees to **create low benches** with variable surface elevations to create hydrodynamic complexity to support emergent vegetation; modify waterward side of levees or set back levees landward to create low floodplain benches.

Additional references to sedimentation in the EIR/EIS:

- Excavate from river bed (cofferdam area) an approximate depth of 30-35 ft of soil, for an excavated volume of 22,600 cubic yards. ***EIR/EIS, Appendix 3C;***
- Dredging on river bank and in river channel at each cofferdam. ***EIR/EIS, Appendix 3C; and***
- Chapter 6 Surface Waters, Mitigation Measure SW-4 indicates BDCP will design measures[97] to prevent a net increase in sedimentation discharge or accumulation in water bodies in order to avoid substantially affecting river hydraulics ***during peak conditions*** and changes in the courses of waterbodies. Will prepare a detailed sediment transport study and a sediment management plan for all water-based facilities, which will include periodic and long-term sediment removal actions.

While SW-4 in EIR/EIS Chapter 6 on Surface Waters does mention sediment impacts, they merely identify potential sediment deposits from paved runoff during peak conditions, which is but a minor contribution of sediment compared to the conservation measure activities identified above. Plus, SW-4 fails to provide a specific mitigation for reducing sediment build-up from surface run-off. Therefore, the chapter fails to address the numerous sources of sediment loading that various activities in multiple CMs creates during construction and operations.

RECOMMENDATION – Conduct an analysis of the multiple activities increasing sediment in areas of the Plan Area with specific emphasis on the impacts to flood control facilities, O&M costs and activities, and reductions in flood flow capacities in individual reaches and the SPFC system overall. Insert a new Impact into the Surface Water Chapter disclosing the adverse impacts to flood protection created by sediment loading, including the risks of increased flood exposure and mitigations to reduce those risks. The new impact analysis should specifically evaluate the flood risks created by sediment loading from:

- CM1 construction activities, including the 9-10 cofferdams and dewatering discharges into drainage facilities and the Sacramento River and tributaries;
- CM1 operations of three new intakes on the Sacramento River;

[97] Note that these measures are undefined.

- CM2 inundation affects at the Fremont Weir;
- CM2 inundation affects on flood flow capacity in the Yolo Bypass; and
- Reduced flood flows from in-water fill and benches mentioned in CMs 4-11

RECOMMENDATION – Request the BDCP Annual Operations and Budget Plan include funding for sediment removal or mitigations to reduce flood impacts such as raising levee freeboard to offset loss in channel and flood flow capacity.

H. Prevents or Conflicts with Emergency Response And Flood Recovery Efforts

i) Blocked and Rerouted Roads and Navigable Waters Inhibit and Prevent Floodfighting and Emergency Levee Repairs

Being prepared for a catastrophic event – high water flooding or earthquake failures – requires having an effective strategy for preventing failures first with ongoing improvements and maintenance, protocols for responding with emergency flood fighting activities, and a plan for clean-up and recovery after the event.

Emergency Preparedness

Based on the State's flood history, the BDCP is guaranteed to experience at least one major flood event during the nine-year construction period for conveyance facilities. In addition to modification of the State's flood management system, BDCP proposes extensive alteration of the existing Delta road configuration by moving, re-routing, and blocking road segments, including state highways, for at least nine years, but failed to analyze impediments to a safe and timely evacuation during an emergency, such as invading floodwaters.

The inability to quickly floodfight and repair a damaged levee will result in loss of life and property in the area protected by that levee, and could have the domino effect of causing neighboring levee failures if CM1 construction activities/equipment bar access to the levee break or to key floodfighting personnel and supplies.

During the 10-year construction period, BDCP needs to make sure that activities and equipment in waterways and on roads do not in any way block or interfere with the ability of the local RD, DWR levee inspection branch or emergency response branch, county OES, CalEMA, or USACE to conducts levee inspections and maintenance or to floodfight in the event of levee damage or failure.

RECOMMENDATION – Identify and mitigate construction impacts that impede fast access to levees when floodfighting is needed. Construction impacts that impede access of the levees to

RD's, DWR levee inspectors, or USACE for inspection and maintenance also need to identified and mitigated.

RECOMMENDATION - The BDCP should identify and solidify through MOUs with local emergency services a clear chain of command: who pays for what, coordination of response and funding, and cooperative effort to pursue federal reimbursements for recovery. To prevent flooding, consideration of the new conveyance and habitat restoration projects proposed in the BDCP should ensure any impacts to flood conveyance or levee integrity are fully mitigated. Additionally, levees should be pro-actively upgraded (armored, raised, widened) whenever possible to make them resistant to flood and earthquake events.

ii) Fails to Provide Flood Evacuation Plan For BDCP Workers Or Delta Communities

Risk from levee failures can be reduced, but it cannot be eliminated, so being prepared for a flood emergency is the best defense – *the "ounce of prevention" theory.*

Based on historical flood records, a high water flood event occurs every decade, which means the BDCP is guaranteed to have at least one major storm causing flooding during construction of CM1. In addition, there are numerous significant adverse impacts to the Delta and SPFC levee systems from dewatering subsidence, sediment loading and cofferdams restricting flood flows, seepage from disrupted drainage, erosion from habitat levee breaching, degradation of levee stability by excessive truck traffic and pile driving, inability to inspect or floodfight levees, and many other activities that reduce the overall flood risk protection in the greater area of CM 1 construction.

However, the EIR/EIS *Public Services and Utilities Chapter* fails to acknowledge, analyze, or mitigate the potential for unintentional levee breaches and widespread floodwaters to inundate BDCP construction areas and adjacent communities.

RECOMMENDATION – Insert a robust analysis and corresponding Impact Statement into the EIR/EIS *Public Services and Utilities Chapter* requiring DWR to (as mitigation for the diruption to floodfighting and emergency services) enter into a binding agreement with local emergency services agencies (including reclamation districts) to mutually develop a flood emergency response plan that includes a floodfighting, worksite and community evacuation, and recovery plan.

VII. FAILS TO ANALYZE MODIFICATION OF SPFC PURPOSE AND FUNCTION BY CM2

A. CM2 Alters Design and Management for Operation of SPFC Facility for Non-Flood Purpose

CM2 has several different individual projects that propose modifying different areas of the Yolo Bypass (Plan Chapter 4, Section 4.2.2 and EIR/EIS Aesthetics Chap, Impact AES-6) including: fish management facilities (e.g., screens, ladders, ramps, barriers); realignment of waterways; additional hydrologic monitoring stations; fish rearing pilot project at Knaggs Ranch; support facilities (operations buildings, parking lots, access facilities such as roads and bridges) for access for maintenance and monitoring; modification, removal and construction of berms, levees, and water control structures.

But the primary and most significant change is removing a portion of the existing flood weir (a cement bench allowing high water to passively overflow into the Yolo Bypass when the Sacramento River reaches a certain elevation stage) and replacing with an operable gate to be managed by BDCP governance entities as part of the Annual Delta Water Operations Plan (Sec. 6.3.2).

As proposed, CM 2 would also alter the Sacramento and Fremont Weirs, breach multiple levees, convert 11,000 to 27,000 acres of the Bypass to semi-permanent "Floodplain Rearing Habitat," modify Lisbon Weir, and otherwise completely alter the current flow of water through the Basin.

Significantly, the BDCP EIR/EIS:

- ✓ Fails to identify the baseline flood capacity of the Bypass;
- ✓ Fails to identify the impact of surface water elevation changes upon the Bypass; and
- ✓ Fails to identify the potential for either positive or negative flood flow changes caused by the project.

A new operable gate will be installed and operated to allow more frequently and longer duration diversions up to 6,000 cfs into the Yolo Bypass between November and mid-May even during non-flood events which results in a total of approximately 650,000 acre feet of water being removed from the Sacramento River over the six month period:

- Frequent inundation (every 1-3 years) of YB by diverting between 3,000-6,000 cfs for 30-75 days for one or more periods between Nov-May, covering between 11,000-27,000 acres with shallow water. Vegetation maintenance with clearing done in stripes to open areas for water flow and avoid islands, including pruning trees with over 4 inches of

trunk diameter up 6-feet from the ground. Sediment maintenance expected to remove about 1 million cubic yards within 1-mile of the weir about every 5 years, with an additional 1 million cubic yards every other year removed inside the new channel. Sediment may be disposed on properties in immediate vicinity of Fremont Weir or be used as source material for levee or restoration projects, or otherwise beneficially used. ***Chap 4, Section 4.2.2.***

- The average modeled annual inflow at Freeport reduced by about 650,000 af, primarily as a result of the increased Fremont Weir Spills (CM2). ***Plan Chap 5 Effects Analysis, Section 5.3-3.***

During the scoping sessions, very little detail was given in regards to the notching or gating of the Fremont Weir in order to provide flows and inundation of the Yolo Bypass during non-flood years despite the fact that this change to the Yolo Bypass operation would essentially render farming infeasible due to the uncertainty, or inability, to adequately work the soil in time to plant crops.

From a flood management perspective, this change in land use could significantly change the vegetation regime in the Yolo Bypass; reducing the flood carrying capacity if a riparian forest is allowed to grow in the Bypass as has previously occurred in the Sutter and Tisdale Bypasses. Currently, as a byproduct of farming operations, the lands within farming areas and hunting clubs are maintained by the farmers and hunters to keep vegetation managed to avoid diminishing flood flow capacity and roughness.

Lack of vegetation maintenance for as little as one year could effectively create thick stands of trees and shrubs that would act to increase the coefficient of friction within the Yolo Bypass and change the flood carrying capacity. The BDCP EIR/EIS must describe in detail how this capacity will be maintained, or improved if flood capacity improvement is part of the Central Valley Flood Protection Plan.

Of particular concern to reclamation districts and flood managers is how vegetation along or in a floodway influences hydraulics and reduces water velocity. An increase in water surface elevations could make the critical difference between outflanking or overtopping, altering erosion potential and decreasing the available freeboard and the passage of waters safely between the levees of the Bypass. These conditions can quickly erode the backside of levees and imperil life and property. Under these circumstances, the flood control function should not be balanced against, or compromised in order to enable or promote any other potential purposes within the Bypass including conservation or habitat development for purposes of mitigating species impacts associated with SWP or CVP water conveyance.

These conditions would therefore require habitat restoration projects in the Bypass to include levee improvements as mitigation, particularly given that the Yolo Bypass levees protect substantial lands on either side, including the City of West Sacramento and thousands of acres of productive farmland and natural and developed habitat.

As one key omission, EIR/EIS hydraulic analyses fails to include Lower Cache Creek sedimentation entering the Yolo Bypass, and fails to evaluate alternatives to avoid decreasing design flows in the study area which includes the Yolo Bypass. The baseline flood capacity must be properly analyzed and further discussed in order to ensure that meaningful analysis of the public safety impacts can and will occur.

All modifications to the Bypass must be completely understood and mitigated to eliminate any detrimental flood management impacts to the SRFCP and ensure that the Bypass performance is not degraded. Without this information, the conclusion in SW-2 that there are no current impacts to the Bypass cannot be substantiated or justified. While the BDCP EIR/EIS does provide for adjustment of the criteria at Yolo Basin, there is not enough certainty in the proposal to adjust criteria as issues or problems arise throughout the State Plan of Flood Control system as a whole.

RECOMMENDATION - The "Floodplain Habitat Restoration Conservation Measures" proposals that recommend increasing frequency and duration of inundation in existing bypass floodplains and creating new bypasses should include Mitigation Measures for BDCP to fully fund the fortification and increasing size of adjacent levees to bypasses to accommodate new water flows.

RECOMMENDATION - The EIR/EIS should provide analysis and mitigation regarding the current underperformance of the lower Bypass where narrows into a funnel at the bottom and has previously seen water levels go two feet above design stage in that area during flood events. The EIR/EIS should provide analysis and conclusion regarding how much the proposed water operations in Alt 4 increase flood risk above and beyond what is predicted impact from sea level rise/climate change.

B. New Water Diversion Poses Potential Injury to Other Legal Water Users

Water Codes § 1707 requires all water users to petition the SWRCB for a change of use for purposes of preserving or enhancing wetlands habitat, fish and wildlife resources, or recreation in, or on, the water, specifying the time, location, and scope of the requested change. In response, the SWRCB may approve the petition subject to terms and conditions once the Board has determined that the proposed action:

1. Will not increase the amount of water the person is entitled to use;
2. Will not unreasonably affect any legal user of water; and

3. Otherwise meets water code requirements.

The restoration of floodplain, tidal wetlands, and other habitat restoration action proposed in BDCP (CM2-10) will require extensive amounts of water, particularly implementation of CM2 to inundate the Yolo Bypass more frequently and for longer duration. However, the Plan fails to identify the volume of water to be utilized by these new habitat areas or whose water rights will be used to provide that diversion. In addition, the EIR/EIS Water Supply Chapter fails to disclose the impacts to the water supplies of the entities such as SWP/CVP that would presumably be supplying the water from storage.

According to the Plan Effects Analysis, CM2 will result in the diversion of approximately 650,000af of Sacramento River water into the Yolo Bypass between November and mid-May through an operable gate with a total capacity of 6,000 cfs in order to benefit fish. Due to the new diversion point on the Sacramento River and the considerable aggregate amount of water to be diverted from the river, the CM2 Project Description must be amended to clarify the operable gate to be installed and managed in accordance with the BDCP's *Annual Delta Water Operations Plan*, Sec. 6.3.2, will require DWR and USBR to petition the SWRCB to change points of diversion, places of use, and purposes of use of water for the SWP/CVP projects. Other habitat restoration projects in CMs3-22 may also require a petition for change of use be filed.

The Petition for Long-Term Change in Place of Use and Change in Purpose of Use process will allow the SWRCB to determine whether such changes should be conditioned to protect the environment or other legal users of water in order to avoid interference with prior water rights, such as those memorialized in NDWA's 1981 Contract with DWR. The SWRCB's process will also weigh public trust issues, such as how navigable waters would be changed and impacted by this new diversion to be evaluated.

Because CM2 is only analyzed at Programmatic level, the Plan permits and Implementing Agreement should include clear conditions: 1) the intent to pursue a full Project-level EIR/EIS evaluation of CM2 with explicit prohibition to tiering off the BDCP EIR/EIS with a Negative Declaration; and 2) DWR and USBR will file change of use permits with the SWRCB for the Fremont Weir modifications proposed in CM2 so the Board can evaluate the cumulative impacts of the 6,000 cfs Fremont Weir diversion, new North Delta intakes 9,000 cfs diversions, with the continued south Delta intake diversions to assure the proposed changes will not result in injury to other legal water users in the system.

RECOMMENDATION: The cumulative effects in the CMs and EIR/EIS *Water Supply* Chapters should identify how much water (and whose water) will be used for construction, operation, and ongoing management of habitat restoration projects and actions in CMs2-11.

VIII. FAILS TO ANALYZE OR MITIGATE CUMULATIVE EFFECTS THREATENING PUBLIC SAFTEY

The BDCP EIR/EIS should include a strong commitment to mitigating any and all individual and cumulative impacts the Plan's multitude of individual actions and projects may have on reducing the level of flood protection, particularly any adverse impacts to the SPFS facilities. In general, higher water levels along a floodway will require higher levees, and changes in the Delta hydrodynamics will require increased armoring of levees. **No reduction in flood control capacity should occur in the Plan Area as a result of cumulative effects of implementing CMs 1-22 over the 50-year permits.**

A. Global Modification of System Must Maintain Flood Control Function

BDCP actions need to respect and uphold the State of California's commitment to ensure that the flood protection works within the Sacramento San Joaquin Drainage District, including the SPFC, are not modified or encroached upon in any way that will impair their effectiveness or injure the public interest or safety. In considering whether or how to authorize these water supply-related habitat projects within the SRFCP, it is imperative that the BDCP adhere to the CVFPB's obligations and avoid interference with the flood control function of the Bypass, as it exists now or as its capacity may be necessarily increased in the future. The Yolo Bypass is an integral part of that system, protecting the City of Sacramento as well as other cities and towns and extensive valuable agricultural lands.

The projects and activities associated with implementing several BDCP Conservation Measures, including CM 2, 4, and 21 have the potential to create redirected impacts and increased costs for O&M activities of reclamation districts with responsibility for maintaining Project levees in the Yolo Bypass region.

The BDCP's proposed operation of the SRFCP in a way that inundates the Bypass with high flows threatens that regime, and could mean liability for the State of California. Under pre-SRFCP conditions, these flows would have otherwise been contained within the large and distinct overflow basins and along the river reaches north of Fremont Weir. Modifications to the State Plan of Flood Control – including habitat encroachments in the Yolo Bypass proposed by BDCP that enable or increase damage to these Project levees or lands – may well trigger State liability for inverse condemnation brought by affected landowners.

Multiple Impacts in the Yolo Bypass Pose Cumulative Effects

Alteration of the Fremont Weir and Yolo Bypass for operation as a non-flood facility in order to comply with ESA BiOps for continued operation of CVP and SWP water conveyance facilities pose a serious potential threat to the integrity of the SRFCP to operate as a system, which

currently cannot spare even an incremental interference with its flood control function. As one example, the current Notice of Intent on the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project (substantially same as CM2) proposed by DWR and BOR indicate a possible issue with deep scouring at the foot of the fish ramps that could undercut the downstream end of the splash basin that could threaten the Fremont Weir's structural integrity. Additionally, the invert elevation of the proposed fish passage structure through the Fremont Weir would alter the existing hydraulics. At the same time, deeper invert elevations would decrease channel slope, thereby increasing the risk of reverse flows and sedimentation accumulation that reduces flood flow capacity.

In the lower Bypass, the original design capacity provides protection estimated at up to the 65 to 70 -year event, conveying as much as 500,000 cfs. Under current conditions, however, the Bypass has little to no margin for safety during high flow events. The U.S. Army Corps of Engineers has recognized that during the 1986 flood (considered to be a 70-year event in the lower Yolo Bypass), surface water elevations rose to within one foot of the top of the levees (RD 2098), even though the levees were designed with five feet of freeboard.[98] RD 2068 records indicate that at District Unit #1, levee mile 5.5, floodwaters encroached as much as 2.1 feet into the levee freeboard. In the un-leveed areas between District Unit #1 and north to the Putah Creek levees, substantial water moved from the Bypass onto lands for which no flood easements exist.[99]

Moreover, several studies have identified a statistical trend toward increasing variance of annual floods within the Sacramento River system, perhaps related to global climate change.[100] If these trends continue, there will be an increased risk of floodwaters outflanking, overtopping or eroding the Bypass Project levees, and it may be crucially important in the coming years to enhance conveyance capacity in some reaches of the Bypass. This, in turn, may require modification of CM2 features.

Several of the individual projects and actions primarily contained in CM2 and CM4 and the BiOp's RPAs propose to alter the location, configuration, and purpose of the Yolo Bypass as one of the most important safety elements of the SRFCP. These include:

- Modification of Fremont Weir and/or Sacramento Weir and diversion of non-flood waters into the Yolo Bypass (CM2);
- Breaching of levees on Prospect Island to create tidal wetland habitat (CM4);
- Restoration of Floodplain Rearing Habitat covering 11,000 to 27,000 acres of the

[98] Yolo Bypass Working Group, A Framework for the Future: The Yolo Bypass Management Strategy (August 2001)
[99] Records available at the RD 2068 office, 7178 Yolano Rd. Dixon, CA 95620.
[100] *See, e.g.,* National Research Council, *Improving American River Flood Frequency Analyses,* National Academy Press (1999); *Climate Change Impacts and Adaptation in California* (2005), Guido Franco, CEC Staff Paper.

Yolo Bypass for at least 30 days every 1-3 years between the months of Nov and May (CM2);

- Downstream channels graded to improve connectivity to the Tule Canal (CM2);
- Removal of existing water control structures on Bypass property known as Yolo Ranch/Flyway Farms to increase tidal influence for tidal wetland habitat (CM4);
- Levee modifications at Liberty Island/ Cache Slough and Lower Yolo Bypass (CM2/4);
- Lower Putah Creek realignment (CM2);
- Three options for modification of the Knights Landing Ridge Cut: 1) construction of a temporary weir at the outflow end of the existing channel; 2) realignment of the outflow point into the existing Cache Creek Settling Basin; and 3) blocking passage further downstream of the junction of KLRC and the Yolo Bypass (CM2);
- Modifications to Lisbon Weir (CM2); and
- Hydraulic modifications to reduce migratory delays and loss of salmon, steelhead, and sturgeon at Fremont Weir and other structures in the Yolo Bypass. (CM2)

Several of the individual actions in CM2 aimed at modifying vegetation to create habitat and/or improve biological productivity for listed fish species, and propose changing flow regimes in the Yolo Bypass to achieve these habitat permit conditions. As the CVFPB has recognized with 2-dimentional modeling of the neighboring Sutter Bypass, vegetation can increase water surface elevations and inhibit flow velocities within flood bypasses.[101]

Due to existing conditions in the Yolo Bypass, even nominal changes to the bypass that create higher water surface elevations could reduce available freeboard, potentially outflanking or overtopping Project levees. These conditions can quickly erode the backside of levees and imperil life and property. These potentially detrimental public safety impacts are unacceptable from a flood management perspective and must be completely mitigated to ensure that flood flow capacity is not reduced.

New plantings and aquatic habitat projects in the Bypass have the potential to increase hydraulic roughness during flood events, redirect hydraulic impacts, increase water surface elevations and flow velocities along the levees, and exacerbate erosion. Under these circumstances, the critically important flood control function of the Yolo Bypass should not compromised – not even to promote use of the Bypass as aquatic habitat to fulfill the ESA incidental take permit requirements and continue operation of SWP and CVP pumping facilities in the South Delta.

[101] CH2M Hill for California Department of Water Resources, Sutter Bypass RMA2 Model Report at 5-16 (June 2012) ("Results indicate that increased growth of vegetation in the Sutter Bypass and Yolo Bypass....would raise water levels by up to 0.83 foot for the 1957 design flow conditions.")

The Association and its members do not object to the Board as the responsible agency for the SPFC cooperating with other agencies or private parties to benefit listed species, but only if that cooperation will have no impact upon the RDs and the current or potential flood control function in the Yolo Bypass. The Association expects that the terms and conditions in the HCP/NCCP permits and Implementing Agreement will include specific limitations and actions to remedy any reduction in flood protection caused by the implementation of CM2, CM4, or any other BDCP action.

Finally, local districts operate on tight budgets. They cannot and should not be responsible for increased capital, operation and maintenance costs, increased liabilities, or other obligations to offset the proposed habitat project impacts that could undermine the performance of the SPFC and SRFCP.

RECOMMENDATION – As mitigation to avoid reducing the flood flow capacity and functionality of the Yolo Bypass as a critical SRFCP flood protection features, the HCP/NCCP should include terms and conditions for CM2 and CM4 prohibiting implementation of any ESA habitat restoration measures on any SRFCP facilities unless the propose action:

1) Is completely mitigated to eliminate any detrimental flood management function impacts to the SRFCP;

2) Proves, with substantial evidence (hydraulic modeling), that SRFCP flood flow capacity is not reduced by any level from current conditions;

3) CVFPB's encroachment permit conditions require the unconditional removal, at the BDCP's sole cost and effort, if during any time in the 50-year permit CM2 or any other CM actions pose reduction in flood protection level or functionality. In other words, CVFPB needs to retain continuing authority to order changes in permitted habitat encroachment projects when necessary to accommodate current and future flood control needs in the Yolo Bypass. Moreover, these permits must explicitly state the flood control easements in the Yolo Bypass would be both senior in time and paramount to those other water supply related needs. Therefore, they would prohibit any activities that unreasonably interfere with the flood control function of the Bypass as currently allowed or as may be allowed under existing or future flood easements.

RECOMMENDATION – Mitigate vegetation impacts by requiring development and approval by CVFPB a "Vegetation Management Plan for CM2 and CM4 Yolo Bypass Activities" and require the implementation and effectiveness of those mitigation measures, and any flood protection conflicts occurring with operation of Fremont Weir/Yolo Bypass as SRFCP facilities, be annually reported in following BDCP governance and implementation reports:

- Annual Progress Report (Sec. 6.3.3)

- Annual Water Operations Report (Sec. 6.3.4)
- Five-Year Comprehensive Review (Sec. 6.3.5)
- Adaptive Management and Monitoring Program (Sec. 3.6)

B. Comprehensive Evaluation of Combined Conservation Measures

The EIR/EIS Cumulative Impacts Analysis does not provide any sort of comprehensive discussion or analysis of how impacts associated with each CM1-22 relate to each other. For instance, do more than one CM have the same adverse impacts and therefore when combined have an even greater detrimental effect on environmental resources? Every action, or in this case Covered Actions and Conservation Measures, causes a reaction. Yet, the EIR/EIS fails to analyze how the activities and effects in each CM1-22 react to each other, conflict with other, or complement each other.

Instead, the EIR/EIS's Impact Statements simply list individual effects that are disconnected and poorly integrated. The following excerpt from the DRERIP emphasizes this point: "Collectively, the synthesis team concluded that a number of the conservation measures have the potential for additional synergistic effects that can raise or lower the value of some individual conservation measures when implemented concurrently with other actions. The complexity of the various trade-offs between expected positive and negative effects make it difficult to predict the biological responses to concurrent multiple measures." The BDCP and therefore the EIR/EIS still suffers from this problem and needs to provide this synthesis to support why the collection of CMs in Alternative 4 are in fact the right mix and will not in fact result in making the Existing Conditions worse if they are implemented.

Recommendation: Add a Chapter to the EIR/EIS that shows what action and reaction each of the CMs Impacts have to each other and cumulatively if and when all are implemented over the life of the Plan. A cumulative impacts analysis on the SPFC facilities and operations as a system must be evaluated in particular.

C. Permit Conditions Must Prevent Subjugation of Flood Control Function

Due to the substantial reliance on "programmatic" analysis of BDCP's habitat restoration effects, including projects that will significantly modify the configuration and purpose of SPFC facilities such as CM2, the Association does not have sufficient project description and details to suggest specific measures to protect the flood system facilities in the Plan Area.

Therefore, the Association recommends the BDCP Plan and Implementing Agreement provide general assurances via binding HCP/NCCP permit conditions that the BDCP will not impede,

diminish, or impair the flood flow capacity or functionality of the Yolo Bypass or other flood facilities in the Plan Area.

RECOMMENDATION – The Implementing Agreement should specifically require the following terms and conditions for BDCP Conservation Measures that propose to alter or encroach upon SPFC facilities, and should also be included as conditions in permits issued by the USACE and CVFPB on all BDCP project and actions:

- Conservation measures must demonstrate a net positive flood control improvement;
- Conservation measures must not impede, cause redirected impacts to, or foreclose upon flood conveyance improvements designed to
    - correct current deficiencies and meet PL 84-99 requirements,
    - meet CVFPP requirements, or
    - fill future flood system needs within the Plan Area;
- Conservation measures must be prohibited from diminishing or subjugating in any way the existing flood control easements held and enforced by state and local flood control agencies;
- Conservation measures must contain clearly defined and enforceable limits as to vegetation type, orientation, maximum acreages and hydraulic roughness;
- Conservation measures must provide assurances that the BDCP has the continuing obligation, long-term funding, authority and ability to maintain the Project to USACE and CVFPB permitted standards, with the explicit acknowledgment that the Board retains clear duty and authority to require or undertake themselves and seek reimbursement for any remedial work necessary to maintain permit conditions and reliability of the flood control structure;
- Conservation measures must require annual monitoring and reporting of encroachment permit maintenance through the Annual Progress Report;
- Conservation measures must commit to conduct periodic analysis of the hydraulic performance of permitted encroachment to identify and mitigate any flood reduction impacts;
- Conservation measures must submit to the CVFPB's continuing authority to modify permit conditions, compel project modifications or revoke the flood encroachment permit if the project fails to meet the required flood control performance, does not meet the net positive flood control assurances, does not or cannot operate to meet permit conditions, or impedes the ability of the Sacramento River Flood Control Project from fully and unconditionally utilizing the existing flood control easements;

- Conservation measures must not result in new or increased regulatory actions, or cause adjacent private or public operations to incur costs or requirements without being compensated for them;
- Conservation measures must fully fund *for the life of the permit* any additional operation and maintenance or levee improvement costs incurred by adjacent flood control agencies due to implementation of BDCP Conservation Measure or mitigation actions.

D. Minimize Cumulative Seepage, Erosion, and Overtopping Damage

Many aspects of CM1 construction and habitat restoration efforts would cause an increase in water surface elevations. This could make a critical difference between outflanking or overtopping a levee, altering its erosion potential and decreasing a levee's available freeboard; it could also impair the safe passage of waters between the levees of the Yolo Bypass. These conditions can quickly erode the backside of levees and imperil life and property.

Changes to channel hydrodynamics and flows as well as water elevations and volumes, as proposed in many of the habitat projects and as may occur during CM-1 construction could create additional costs to reclamation districts from erosion and seepage damage that may require additional rocking, large land-side berms, or other levee improvements to mitigate the impacts. At the very least, seepage monitoring will need to be installed and addressed in locations surrounding new aquatic habitat areas, particularly since 158,000 acres of habitat is contemplated in BDCP. In addition, BDCP will need to provide funding in perpetuity to affected reclamation districts/landowners for their additional pumping costs to maintain the land for current and future agricultural production.

Despite the impression given by *EIR/EIS Surface Water Chapter Impact SW-8,* there are other significant impacts besides wind fetch imposed on the flood protection systems – particularly the SPFC facilities – that require disclosure, analysis, and mitigation. Yet, these other causes and impacts were deliberately omitted and analysis was not performed amid incorrect assertions that USACE and CVFPB permitting of habitat conservation measures will address any impacts on levees.

In addition, the cursory discussion of wind fetch damage and potential mitigation lacks any supporting evidence, because specific remedies are postponed until future studies can be completed prior to habitat development. This delay in impact disclosure and identification of specific mitigation raises serious concerns with flood control managers that the full extent and severity for potential damage to levees, wind or otherwise, has not been properly addressed due to lack of rigorous analysis as required under NEPA.

Examples of other threats to SPFC and levee integrity and stability other than wind fetch from multiple BDCP habitat conservation measures that was not analyzed in SW-8 include:

- More frequent and longer duration inundation of the Yolo Bypass through new diversion gate at Fremont Weir;
- Breaching and moving of levees in the Yolo Bypass to create open-water aquatic habitat;
- Encourage more tidal excursion in areas of the Yolo Bypass;
- Create unnatural reverse and unidirectional flows near the Delta Cross Channel and Georgiana, Miner, Steamboat, and Sutter Sloughs;
- Increased flow velocities in certain channels than occurs under existing conditions due to alteration of configuration of Delta levees and SPFC, powerful sucking of huge in-river diversions, and dewatering discharges exceeding local capacities.
- Seepage due to disconnected drainage systems and dewatering discharges exceeding local drainage capacity.

Impact SW-8 therefore fails to take a comprehensive look or review of the multiple risks imposed on levees. The SW-8 analysis did not even bother to discuss well-known prior seepage and levee boil impacts from fairly recent inundation of Prospect Island and subsequent landowner lawsuits against the USBR,[102] or how Liberty Island levees quickly deteriorated and crumbled when they were not immediately fixed after a breach.

Breaching Project levees to once again inundate Prospect Island is proposed as a habitat project in CM4, despite prior history of the neighboring Ryer Island experiencing increased surface flooding from seepage and boils, which reclamation district engineers attributed to the change in hydraulic pressure caused by flooded state of Prospect Island. This caused damage to crops and prevented planting on certain farm lands that could also be considered significant adverse impact in addition to wave fetch under CEQA and NEPA. Studies were done on the damage to neighboring islands caused by prior Prospect Island flooding, including information gathered from installation of seepage monitoring wells, both at the time and more recently by DWR, yet this information is not discussed or analyzed in the EIR/EIS. This lack of discussion or analysis is particularly astonishing given the availability and breadth of DWR data.

For all of these reasons, it appears that the BDCP EIR/EIS has failed to disclose the significant localized seepage, scour erosion, and wave fetch damage in a meaningful way.

The EIR/EIS analysis should be more robust and detailed in its discussion of the potential for waves, overtopping, and erosion. It should indicate the projected size the waves that are expected

[102] See, e.g., *Islands, Inc. V. U.S. Bureau Of Reclam., Dept. Interior* 64 F.Supp.2d 966 (1999)

to be generated by the various habitat types identified in the Plan might be, which could be done by studying other Delta areas where islands were flooded and not repaired. Further, it should provide studies on what kind of erosion and overtopping damage the different sized waves can cause to levees. Information on how much annual damage BDCP expects to pay for erosion and seepage damage should also be disclosed in the Plan Budget Chapter. Note that seepage was a cause of the damages in *Paterno*.[103]

Finally, EIR/EIS environmental conclusions simply stating that future projects/actions/designs will comply with applicable law does not constitute avoidance of all impacts and does not suffice to replace mitigation. There is new and increased risk of flooding and damage to SPFC facilities posed by habitat measure construction and operations that must be mitigated beyond design/permit requirements of USACE, CVFPB, or DWR, particularly in light of the likely impacts based on the Prospect and Liberty Island examples above. The EIR/EIS also incorrectly assumes, without evidentiary support in the record, that all the mitigation measures will be fully implemented and that the measures will in fact work to avoid or substantially reduce the significance of the adverse impacts. In fact, this may not occur.

In order to approve a project, the lead agencies must identify feasible mitigation measures or alternatives that would avoid or substantially lessen any significant adverse environmental effects of the project.[104] The mitigation measures must also be specific and mandatory, such that they are fully enforceable. Mitigation Measure SW-8 is unenforceable because it fails to set any specific performance standards or criteria for surveying, relocating, repairing, replacing, compensating, or restoring the impacted resource impacted by the project activity.

In addition, Mitigation Measure SW-8 improperly defers the formulation of specific mitigation until some future date, when vague and ambiguous "plans," "studies," or "reports" will be prepared, without imposing any performance standards as to what those plans must do or show. It is reckless to assume that the details of mitigation will be fleshed out at an unknown future date. The formulation of mitigation measures cannot be deferred until a later time based on completion of future studies or agreements being signed, although a lead agency is allowed to provide specific performance standards that specify the extent to which impacts will be mitigated.[105] Mitigation Measure SW-8 fails to provide specifics on either the extent or standards.

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[103] *Paterno* at 1011-2.

[104] Cal. Pub. Res. Code § 21002

[105] It is true that, "Where a lead agency is using the tiering process in connection with an EIR for a large-scale planning approval. . . , the development of detailed, site-specific information may not be feasible but can be deferred, in many instances, until such time as the lead agency prepares a future environmental document in connection with a project of more limited geographical scale, as long as deferral does not prevent adequate identification of significant effects of the planning approval at hand."[Emphasis added]. (Guidelines, § 15152, subd. (c); see, e.g., In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1170 (In re Bay-Delta EIR). However, here, the development of the information is feasible, given the

RECOMMENDATION – Request the BDCP Consultants conduct a rigorous analysis of levee erosion damage posed by BDCP CMs 1-10 to specifically evaluate the comprehensive nature and number of habitat actions that could undermine the integrity and stability of SPFC and Delta levees. Analyses should specifically utilize information on erosion damage and existing weak levees discussed in CVFPP and other USACE, DWR, and CVFPB modeling and documents including but not limited to:

- State-Led Basinwide Feasibility Studies
- Levee Evaluation Program
- Flood Control System Status Report
- State Plan of Flood Control Descriptive Document

RECOMMENDATION – SW-8 must be expanded to describe details on the specific design elements, operational requirements, or permit conditions that would be implemented by each permitting agency (USACE/CVFPB), such as raising existing levee heights to prevent wave fetch overtopping, installation of seepage monitoring wells, or building a landside berm to prevent seepage might be options and how each of the elements would avoid or mitigate the impacts identified in EIR/EIS.

RECOMMENDATION – Mitigation Measures must be added to the EIR/EIS *Surface Water Chapter* to avoid or reduce impacts to Delta and SPFC levees from seepage, erosion, increased drainage pumping costs, or lost crops damaged by localized flooding.

RECOMMENDATION – DWR's maps of seepage areas on Delta islands where CM 1-10 projects with be built must be added to the EIR/EIS *Surface Water Chapter*. Maps of existing drainage systems, including pumping stations, and system capacities should also be added to the chapter appendices. These maps are easily available to DWR and should assist analysts in understanding the on-the-ground impacts of the habitat proposals and construction of CM-1.

RECOMMENDATION – Expand the Surface Water Chapter and impact analyses to include readily available modeling and other studies regarding flood capacity.[106]

RECOMMENDATION – Apply existing data and baselines from CVFPP to compare and contrast all of the possible hydraulic and flood impacts like erosion and seepage, changes in river and surface water flow direction and velocities, and increased hydraulic pressure, or the duration

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plethora of available data from past endeavors, as well as needed to identify significant effects – specifically, the flood and public safety impacts of the proposed project, as well as the potential liability.

[106] Other plans such as Central Valley Flood Protection Plan, studies from Sacramento County regarding how building structures could impede or re-direct flows and how the County's plans mitigate such impacts are mitigated, and any studies by FEMA regarding how building very large elevated dirt pads re-directs flood impacts (surface runoff) to other structures, are among those that should be included.

of these actions to determine whether Impact SW-9 in fact properly captures and characterizes the full extent of damage that could be caused by building large elevated structures in flood hazard areas with known seepage and drainage issues.

RECOMMENDATION – Request that SW-8 be revised to account for and analyze impacts resulting from BDCP habitat restoration activities if the USACE and CVFPB permit mitigation measures are not implemented or are not working, in terms of reducing or avoiding adverse impacts created by BDCP conservation measures.

E. Usurps Availability of Local Habitat Values Needed to Mitigate Impacts of Long-Term Levee Improvements

With the BDCP Conservation Measures recommending large areas of ecosystem restoration as near and long-term goals, this may result in a future deficiency of suitable land for mitigation of future projects to benefit Delta communities. This puts the Delta communities at real risk of being unable to pursue necessary projects such as levee improvements to keep up with sea level rise or stabilize for seismic risk, because of lack of available, suitable mitigation habitat, as it will prevent the Delta from evolving as a place.

RECOMMENDATION – Request the EIR/EIS mitigate the loss of available long-term habitat lands available to flood control agencies to mitigate impacts of future levee improvement projects by including these future levee improvement projects as Covered Actions presumed to occur over the 50-year permit. Alternatively, the BDCP as a mitigation measure could set aside some habitat developed as part of large-scale restoration projects for use by RDs in the Plan Area, making this habitat available during the 50-year permit term to mitigate RD flood protection projects, particularly those cost-shared with the state in the Delta Levees Program. Due to the substantial reliance on "programmatic" analysis of BDCP's effects, including projects that will significantly modify the configuration and purpose of SPFC facilities such as CM2, the Association does not have sufficient project description and details to suggest specific measures to protect the flood system facilities in the Plan Area.

F. Sediment Loading Throughout Plan Area Reduces Channel Capacity

Multiple activities described in the Conservation Measures and construction description are expected to increase sediment loading and place fill (dirt) in waterways in the Plan Area. Increases in sediment amounts in most areas described result in reduced flood capacity and higher risks of flooding from overtopping.

Because the EIR/EIS has not conducted an evaluation of sediment impacts or analyzed the historical or baseline conditions for affects that sediment as on flood control facilities, it fails to recognize that the amount of in-water dredging the BDCP expects to conduct in order to prevent overloading of sediment is unrealistic and infeasible from a regulatory permitting standpoint.

Therefore, the reduction in sediment impacts that the EIR/EIS claims is overly optimistic and more severe impacts to flood flow capacity is likely to occur from the multiple activities expected to increase sediment levels.

Between the Plan and EIR/EIS, BDCP is expected to increase sediment loading in the Sacramento River and tributaries at all 9 of the cofferdams during construction, the three intakes during operations (CM1), the Fremont Weir at the new operable gate, in the Yolo Bypass from more frequent inundation (CM2), and from several tidal habitat restoration projects:

CM1 – New Conveyance Facilities

- At least 9 in-water cofferdams in Sac River and several Delta channels for construction of 3 intakes and 6 barge loading facilities -- could be more cofferdam locations including Sacramento Weir or locations where operable gates are being installed
- **Increased sediment loading and removal** at intake locations

CM2 – Fremont Weir Modification & Yolo Bypass Inundation

- **Sediment removal** from Fremont Weir (approx. 1 million cy within 1 mile of weir expected every 5 years)
- **Sediment removal** inside the new channel (additional 1 million cy every other year)
- **Sediment disposal** on lands in vicinity of Fremont Weir or used as source material for levee improvements

CM 4-11 – Habitat Creation in 6 ROAs throughout Plan Area (Plan Sec. 4.2.3 and Table 4-4)

- Grading, excavating, and **placement of fill material (occurs near levees**)

CM4 – Tidal Habitat Creation (65,000 acres)

- Grading and **fill in some locations**
- Based on local hydrodynamic conditions, topography, and **sediment transport** restoration sites may be graded to accelerate development of tidal channels within restored marsh plains. Following introduction of tidal exchange, tidal marsh vegetation will be planted and naturally establish in marsh plains

CM5 – Seasonally Inundated Floodplain (10,000 acres additional to Yolo Bypass CM2)

- Remove existing riprap or other bank protection to allow for channel migration between the setback levees through natural **erosion and sedimentation**

CM6 – Channel Margin Enhancement

- Enhance 20 miles of channel margin along fish migration corridors by improving channel geometry and restoring riparian, marsh, and **mudflat habitats on the river side of levees**
- Construct a shallow gradient from lower-elevation, **submerged, shallow benches along existing river channels** to higher elevation riparian habitat
- Modifying or setting back levees to **create low benches** with variable surface elevations to create hydrodynamic complexity to support emergent vegetation; modify waterward side of levees or set back levees landward to create low floodplain benches

Additional references to sedimentation in the EIR/EIS:

- Excavate from river bed (cofferdam area) an approximate depth of 30-35 ft of soil, for an excavated volume of 22,600 cubic yards. ***EIR/EIS, Appendix 3C.***
- Dredging on river bank and in river channel at each cofferdam. ***EIR/EIS, Appendix 3C.***
- Chapter 6 Surface Waters, Mitigation Measure SW-4 indicates BDCP will design measures *[measures are undefined]* to prevent a net increase in sedimentation discharge or accumulation in water bodies in order to avoid substantially affecting river hydraulics ***during peak conditions*** and changes in the courses of waterbodies. Will prepare a detailed sediment transport study and a sediment management plan for all water-based facilities, which will include periodic and long-term sediment removal actions.

While SW-4 in EIR/EIS Chapter 6 on Surface Waters does mention sediment impacts, they are only from paved runoff during peak conditions which is minor contribution of sediment compared to the conservation measure activities identified above. Plus, SW-4 fails to provide a specific mitigation for reducing sediment build-up from surface run-off. The chapter therefore fails to address the numerous sources of sediment loading that various activities in multiple CMs creates during construction and operations.

RECOMMENDATION – Request an analysis of the multiple activities increasing sediment in areas of the Plan Area with specific emphasis on the impacts to flood control facilities, O&M costs and activities, and reductions in flood flow capacities in individual reaches and the SPFC system overall. Insert a new Impact into the Surface Water Chapter disclosing the adverse impacts to flood protection created by sediment loading, including the risks of increased flood

exposure and mitigations to reduce those risks. The new impact analysis should specifically evaluate the flood risks created by sediment loading from:

- CM1 construction activities, including the 9-10 cofferdams and dewatering discharges into drainage facilities and the Sacramento River and tributaries
- CM1 operations of three new intakes on the Sacramento River
- CM2 inundation affects at the Fremont Weir
- CM2 inundation affects on flood flow capacity in the Yolo Bypass
- Reduced flood flows from in-water fill and benches mentioned in CMs 4-11

RECOMMENDATION – Request the BDCP Annual Operations and Budget Plan include funding for sediment removal or mitigations to reduce flood impacts such as raising levee freeboard to offset los in channel and flood flow capacity.

RECOMMENDATION – Request the EIR/EIS provide an analysis of flood risk impacts in the Plan Area if the BDCP cannot conduct the amount of dredging and sediment removal identified in the Plan and EIR/EIS.

RECOMMENDATION – Request the BDCP Annual Progress Report include a section disclosing status of annual dredging and sediment removal targets, with particular attention given to how much behind the schedule for sediment removal is for the year, quantifying the amount not removed.

RECOMMENDATION – Request a Mitigation Measure be added into one of the EIR/EIS Chapters and the Implementing Agreement, placing a condition on the HCP/NCCP permits that the CVFPB be allowed to utilize their enforcement authority to go in and remove sedimentation build-up, vegetation, and other flood flow impediments created by implementation of CM2 with requirement that BDCP is responsible for reimbursing the CVFPB for all costs incurred in maintaining Yolo Bypass coefficient.

G. Willing Sellers Necessary to Achieve Cumulative Habitat Goals

As public entities that commonly utilize the eminent domain process for the public works reclamation districts certainly understand and support the importance of such a tool for the construction of public works such as water conveyance components of the State Water Project – a.k.a. CM1.

Willing Seller - the foundation of trust for environmental land acquisition

However, "willing sellers" is universally accepted as the policy to be followed in HCPs for acreage needed for habitat, therefore it would be a misuse of eminent domain powers to acquire land for habitat in such a hostile way. Any hint to do otherwise will be considered by many Delta residents as intent to implement the BDCP in a combative attack, rather than a cooperative and neighborly manner. Veering from this tradition will set an unfortunate precedent and is likely to have a chilling effect on success of achieving BDCP habitat goals and on whether future HCPs will be embraced by communities if they know that eminent domain has been used for purchase of habitat restoration acreage in a State public works project.

Much of the terrestrial and wetland habitat in the Plan Area is protected by private landowners, waterfowl clubs, land trusts and local conservation efforts including HCPs. Many local state and federal wildlife refuges suffer from a lack of adequate funding and increasing responsibilities. The existing burdens of the SWP/CVP Delta water export projects to restore habitat due to jeopardy findings on their facilities (BiOps) cannot fairly be placed on the backs of the very people who have protected the habitat and manage sustainable agriculture

Approval of the HCP/NCCPs without an explicit will seller policy will render State and Federal wildlife agencies complicit in the "taking" of private lands that have been managed for productive agriculture for generations.

Finally, willing sellers is the foundation of trust for environmental land acquisitions, but is missing from BDCP. "Taking" private land in order to provide endangered species Incidental "Take" Permits to DWR and USBR in order to benefit regions outside the Delta by the delivery of "up to full contract amounts" as stated in the BDCP Project Purpose sends the wrong message to Delta residents and significantly reduces any opportunity for cooperation from them on the implementation of the Project Goals and Objectives.

The California State Legislature thought a "willing seller" policy was important to include as a requirement for the Delta Conservancy (PRC § 32366) which is designated in the Delta Reform Act statutes as a primary State agency to implement ecosystem restoration in the Delta. The Legislative intent clear mandates "willing seller" for Delta habitat acquisition, therefore the BDCP Plan and Implementing Agreement should do the same.

RECOMMENDATION - To avoid alienating Delta residents even further, the Implementing Agreement for the BDCP should have a provision inserted that specifically prioritizes the use of public lands first, then considers conservation easements to be maintained by private landowners next, and adopts a willing seller policy for fee title purchase of property for any habitat restoration or other action not constructing SWP facilities (unless landowner requests

condemnation), thus explicitly prohibiting the use of eminent domain for all actions not contained in CM1.

H. Phasing Of Intake Construction Will Reduce Cumulative Flood Impacts

The Association agrees with BDCP Project Proponents that uncertainty is not a good reason to do nothing. However, in the case of the BDCP, the high degree of uncertainty for achieving any meaningful benefits for covered species as expressed by independent science reviews and ESA permitting agencies,[107] results in a fundamental failure of BDCP to comply with NEPA, CEQA, ESA, NCCPA and other applicable law. [108] According the independent review of the Plan and Effects Analysis by fisheries biologist Dave Vogel, every aspect of the impacts of BDCP on salmonids is either "uncertain" or "highly uncertain."[109]

What are the uncertainties associated with implementing the BDCP? According to the BDCP documents, uncertainty exists in nearly every aspect of the project: fishery benefits, availability of private land for habitat, to the success of proposed mitigation. Listing the uncertainties would take too long because the word "uncertain" appears 1,008 times in the Plan and a whopping 2,303 times in the EIR/EIS and appendices.

Despite the independent criticism of these uncertainties, BDCP proponents continue to blindly pursue the same "damn the torpedoes, full steam ahead" attitude that they did when promoting the original Peripheral Canal in the 1980s. However, this time, BDCP Proponents are not including the same precautionary measures such as phased construction and important assurances to the Delta and environmental resources that they did in the original proposal – or required to obtain voter approval. Instead, BDCP Proponents appear to be betting everything on one horse to win and ignoring the extreme amount of risk for species, water supply reliability, and flood risk if they have chosen a horse hobbled by severe environmental and fiscal uncertainty.

It is noteworthy that the original Peripheral Canal legislation (SB 200 and ACA 90) contained specific protections designed to reduce environmental uncertainty and to protect Delta communities, including:

- DWR executing water supply and water quality settlement contracts with 8 in-Delta entities (including NDWA, whose comments are referenced in this letter);
- Prohibition against DWR transporting water for the CVP until Congress enacted legislation or the Secretary of the Interior entered into a permanent contract with the department that specified certain terms and conditions;

[107] Vogel Report, NAS Comments, ISB Comments , Latour, R., Ph.D., Technical Review of the Bay-Delta Conservation Plan (BDCP) and Related Environmental Impact Review (EIR) (May 16, 2014) ("Latour Report")
[108] Vogel Report, Latour Report, NAS Comments, ISB Comments
[109] Vogel report

- Phasing the construction of the project so that a new intake in Hood would be operated for two years in order to establish adequate fish screen and operational criteria before the next phases could proceed.

Governor Jerry Brown's Administration obviously agreed to this precautionary approach the first time around and should do no less now. Currently, CM1 as proposed will require the three new North Delta intakes to undergo some operational fish screen testing prior to full pumping – but only *after* all three North Delta diversions have been built. If these never-before-used screens do not function as planned in terms of fish protection, then this gamble will end up a losing proposition for at least one out of the following three: the Delta ecosystem, "Delta-as-Place," or CVP/SWP Delta water contractors (who will be stuck with long-term payments on a very expensive stranded asset).

Finally, it is important to point out a fact that is rarely discussed in BDCP – SIZE matters. Other than the CVP/SWP existing diversion intakes in the South Delta, the average size of the Delta's agricultural water diversion intakes is about 12 inches with a 10-15 cfs capacity (mostly siphon, not pumps) while the urban intakes are less than 300 cfs. By comparison, each of the BDCP individual intakes will be 3,000 cfs with a combined fish screen length of a little over a mile to be placed on a four-mile stretch of the Sacramento River's east bank.

The BDCP used the size of the Glenn-Colusa Irrigation District's (GCID) 3,000 cfs intake as the precedent for the size selected for CM1. However, GCID's facilities are not located in a tidal estuary, do not have to screen for smelt, and were not without their own problems.[110]

RECOMMENDATION – To mitigate environmental and human resource impacts, require conditions in the Plan and Implementing Agreement for the CM1 construction to be phased so that one intake is built and fish screen effectiveness and compliance with permits is tested and the altered Delta hydraulic and surface water elevation changes can be analyzed and mitigated before building the other two intakes.

IX. COORDINATION WITH FLOOD MANAGEMENT AGENCIES, PLANNING EFFORTS, AND DELTA PROTECTION LAWS

Every year, floods cause an estimated $2 billion in property damage, according to the National Oceanic and Atmospheric Association and California's Central Valley has been identified in one of the nation's highest risk categories. However, since the Legislature passed legislation mandating development of a flood protection plan and voters approved more than $4 billion in bond money for flood infrastructure after Hurricane Katrina raised public awareness to the

[110] These problems ultimately resulted in a very expensive redesign of fish screens and forebay. See chronology in *U.S.A. v. Glenn-Colusa Irrigation District* CVS-91-1074-DFL-JFM (1991)

dangers of levee failures, state and local partnerships have diligently been working to improve the level of flood protection.

To safeguard at-risk people, properties and communities, the State of California holds the responsibility for a system of levees, weirs, bypasses and other risk-management facilities. Collectively, these State-federal flood protection works –as well as their associated lands, programs, conditions, and mode of operations and maintenance – make up the State Plan of Flood Control (SPFC).[111] These levees and other facilities provide flood protection during major storms to over 2 million people in 14 counties, including the Delta, and defend an estimated $47 billion worth of urban and agricultural development and the conveyance of SWP/CVP water deliveries from destruction.

The BDCP indicates several portions of the SPFC facilities will be removed, built on, vegetated, inundated, moved, or breached in order to construct new SWP water conveyance facilities and restore habitat to obtain state and federal incidental take permits for the 50-yearcoordinated operations of the SWP and CVP Projects. However, the BDCP has failed to provide any meaningful description of how the hundreds of actions in the Plan's 22 Conservation Measures will either complement or conflict with the hundreds of flood protection projects currently being planned in the Delta as part of the Central Valley Flood Protection Plan adopted in 2012.

There are also ongoing cooperative flood protection projects in various phases between the USACE, CVFPB, and local RDs using funding appropriated by Congress for improvements to the SPFC and by voters in Proposition 1E. In fact, as part of the ongoing CVFPP, regions have been developing local flood protection projects for their area and meeting once a month in coordination meetings with the other regions, DWR, and the CVFPB. Yet, the public and decision makers are not informed of this or told how BDCP will ultimately integrate projects slated for the same or adjacent locations.

Ironically, this appears to be an example of the left-hand, right-hand scenario because the two separate branches of DWR each lead the CVFPP and BDCP efforts, but have failed to integrate or coordinate the two processes and plans. The Association warns BDCP and DWR as the lead agency that implementation of these two massive infrastructure projects can either be done in a complementary manner to achieve the two objectives (flood protection and export water supply) by combining forces and funding or continuing to resist serious and meaningful coordination which will result in a head-on collision leaving one or both of these infrastructure plans as fatal victims of this myopic planning.

Following are issues the Association believes have us all headed on a path of mutual destruction instead of mutual benefits.

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[111] Proposition 1E and Public Resources Code (PRC) Section 5096.805 (j). A complete description of these assets and resources has been compiled by DWR into the *State Plan of Flood Control Descriptive Document,* available at http://www.water.ca.gov/cvfmp/docs/DRAFT_SPFC_Descriptive_Doc_20100115.pdf

A. Central Valley Flood Protection Plan Conflicts

As statutory mandates, directives, and intent adopted into law by the California State Legislature, the CVFPP has supremacy over the voluntary terms and conditions of incidental take permits issued under HCP and NCCPA. Therefore, the BDCP Plan and EIR/EIS must disclose how the projects contained therein will propose modifications and mitigations to assure compliance and compatibility with the CVFPP.

The Federal government has reconstructed levee systems along the Sacramento and San Joaquin River systems. The individual levees within these systems act in coordination in order to provide flood benefits to all lands within the Central Valley of California. The State of California is currently working on the Central Valley Flood Protection Plan, which will evaluate the current system and recommend implementation of certain flood projects. The main concern of the Association is that the BDCP must act in accordance and coordinate with the ongoing work of the State under the Central Valley Flood Protection Plan. In particular, the key component of the Sacramento system is the Yolo Bypass, which carries 80% of the water at the latitude of Sacramento during extreme floods.

The current State Plan of Flood Control and the Central Valley Flood Protection Plan are currently evaluating the adequacy of the existing flood control system. In addition, the plans will be looking at increasing protection to urban areas at the 200-year flood frequency level. The results of these plans may cause the Yolo Bypass and other parts of the system to be modified in order to increase their flood carrying capacity. It is imperative that the EIR/EIS evaluate impacts to flood protection when developing habitat or additional floodways under its plan. The EIR/EIS must avoid reducing current flood capacity throughout the whole Central Valley flood control system.

The BDCP's failure to analyze in the EIR/EIS how the substantial alteration of flood facilities proposed by CMs 1, 2, and 4-11will comply with legislatively-mandated objectives contained in CVFPP which the State has spent millions of dollars of bond money to develop. These are costly omissions if BDCP projects increase Sate's liability exposure or conflict with flood investments identified during CVFPP implementation.

RECOMMENDATION – EIR/EIS must evaluate and mitigate impacts to conflicts with flood protection projects being planned as part of legislatively mandated CVFPP, including achieving 200-year level of flood protection in urban and urbanizing areas during the BDCP permit term.

B. Conflicts With USACE Vegetation Policies

As mentioned in Factual Background Section of our comments, the Army Corps has "minimum" standards for maintaining vegetation-free buffer zones on all SPFC facilities, including Project Levees.

Many of the individual actions contained in the BDCP's habitat conservation measures propose planting "riparian" vegetation to benefit aquatic species. CM6 has explicit intent to plant at least 20 linear miles of channel margin by modifying channel geometry to accommodate new riparian, marsh, and mudflat habitats on the water side of levees to improve habitat conditions along salmon migration routes. CM5 Seasonally Inundated Floodplain Restoration and CM7 Riparian Natural Community Restoration are also related to increasing vegetation (described in Plan Section 3.4.5.3.3)

Section 3.4.6's description of CM 6 states that at least 15 miles of the enhancement will be sited along the channels of the following: Sacramento River, Steamboat Slough, and Sutter Slough. All of these waterways are protected by SPFC Project levees and therefore must comply with USACE vegetation restrictions. However, neither the Plan nor the EIR/EIS analyzes the "feasibility" of these locations or the possibility that the CM6 goals and objective cannot be achieved due to conflicts with the Army Corps vegetation policies.

If not carefully designed to avoid encroachment onto the flood control structures that are under the jurisdiction of the CVFPB, the USACE restrictions on vegetation may apply and the BDCP cannot assume that the Plan's vegetation objective can be accommodated during the 408 permitting process. Therefore, the EIR/EIS must account for this possibility in its analysis and by offering alternative conservation measures to replace this one.

RECOMMENDATION – Insert maps into the Plan to identify preferred location of the channel margin habitat that specifically show whether the levees proposed for vegetation plantings are SPFC Project levees or other facilities in the USACE RIP program.

RECOMMENDATION – The Plan and EIR/EIS must include alternative options for achieving CM6 objectives if the locations identified in Plan Section 3.4.6 are not able to plant the amount of vegetation assumed to be necessary to contribute to recovery of covered species.

RECOMMENDATION – To mitigate the impacts that increased vegetation can have on flood protection in the Plan Area, the Plan and Implementing Agreement should require as a condition of the permits a requirement the execution of binding agreements (MOU) with the CVFPB to memorialize the commitment of BDCP to fund a securitized endowment to fund the application

and ongoing maintenance requirements of a vegetation variance from the standard vegetation guidelines for CM6 and all other habitat restoration actions proposed on SPFC facilities. The MOU will confirm the commitment of the BDCP Proponents or DWR to manage the vegetation in perpetuity in accordance with the variance requirements to maintain reliability of the flood control facility: 1) maintain the safety, functionality, and structural integrity of the flood facility; 2) ensure accessibility for surveillance, monitoring, inspection, maintenance, and flood-fighting is retained; 3) conduct periodic clearing of some types of vegetation; and 4) agree that the variance does not substitute for poor maintenance practices.

RECOMMENDATION – To mitigate the impacts that increased vegetation can have on SPFC facilities and in the Plan Area generally, the BDCP Annual Work Plan & Budget should include funding for the ongoing maintenance of all the vegetation planted to meet the Conservation Strategy's habitat restoration goals and the Annual Progress Report should provide annual updates on vegetation management in all BDCP restoration areas with particular attention to any instances where maintenance is falling behind and affecting the reliability of SPFC flood control structures.

C. CVFPB Encroachment Approval Required

Under California law, no modification to the federal/State flood control system (SPFC), encroachment, or project may be constructed on or near the Sacramento and San Joaquin Rivers or their tributaries without the explicit approval of the Central Valley Flood Protection Board. Recent legislation has increased the board's encroachment enforcement authority to remove such encroachments if necessary.

The construction description for CM1 water conveyance facilities indicates numerous work areas and activities that are planned on or near flood control facilities in the Board's jurisdiction, including roads and highways that have levees underneath that are to be moved, blocked, driven on in excess of current conditions or if equipment will be staged even temporarily on or near the levee.

BDCP must identify which agency has regulatory responsibility and the process that must be followed in order to allow this action to occur, especially for levee systems that are under the jurisdiction of the USACE, which at the very least will require permits and approvals from the Corps, CVFPB, and Reclamation Districts. A full description of the flood easement restrictions or other terms and conditions as well as hydrologic modeling results typically required for approvals to modify any portion of the SPFC facilities.

RECOMMENDATION – The commitment to enter into binding agreements (MOU) with the CVFPB and Local Maintaining Agencies/RDs should be inserted as a condition of the Plan

permits and Implementing Agreement to memorialize how staging of construction equipment, construction traffic, and/or road re-routing will occur and negotiate permit conditions prior to any construction activities. The MOU will also describe the flood-fighting funding and activities responsibilities, require development of an evacuation plan for the 10-year CM1 construction period, provide for increased costs to LMA for increased levee maintenance and drainage costs, adoption of a levee maintenance schedule during the 10-year CM1 construction, responsibility for funding recovery after a flood event, and other mitigation measures to ensure the reliability of the flood protection infrastructure to perform in a high water flood event.

D. Fails to Comply with Delta Protection Statutes

Maintaining the Delta levees for flood control provides multiple benefits to the State and is recognized in several sections of the Water Code, Public Resources Code, and the Delta Protection Act. Both Project and non-Project levees are critical elements to the State's ability to convey water through the Delta and maintain water quality as part of the water supply reliability.

Even if new SWP conveyance facilities are ever built, the export of water from the Delta will still require the use of the SWP/CVP South Delta pumps and conveyance of water through the Delta, so the long term stability and maintenance of these levees will remain critical components of a sustainable export supply of water. In addition, the levees are also critical to protecting the other coequal goals of protecting the Delta ecosystem and Delta as an evolving place, including protecting life and property.

Legislative findings in the 2009 Delta Reform Act declare that reducing risks to people, property, and state interests in the Delta to be an inherent objective in the coequal goals for management of the Delta. River flows are talked about extensively in the BDCP: the amount of river flows for fish, water quality, and water supply.

River flows are extremely important to flood management too, but managing those flows for flood protection are not analyzed in the Draft EIR/EIS. One example of how BDCP would reduce the SRFCP's designed flood flow capacity is CMs 1 and 2 require the placement of at least 10 cofferdams in the Sacramento River and Delta channels during construction of the Fremont Weir, 3 intakes, and 6 barge loading facilities. Choking the Sacramento River's flood flows in 10 locations from Natomas to Tracy could cause water to overtop levees in several areas, including up the American River when water starts backing in a flood event.

RECOMMENDATION – EIR/EIS must explain whether activities in the BDCP's CMs comply or conflict with requirements in the Delta Reform Act, Delta Protection Act, and other laws that set standards for flood protection and emergency preparedness in the Delta.

E. Fails To Integrate NEPA Requirements With Other Planning and Environmental Review Procedures

NEPA indicates the purpose of integration is so that all of the related environmental review procedures can run concurrently rather than consecutively. Currently there are several habitat restoration projects in the BDCP Conservation Measures analyzed at a Programmatic level that have their own environmental review processes under development or initiated with Public Scoping and other activities[112]:

- Fremont Weir Fish Passage[113]
- Prospect Island Tidal Habitat Restoration[114]
- Lower Yolo Restoration Project[115]
- Hill Slough Tidal Marsh Restoration[116]
- Rush Ranch[117]
- Lower Putah Creek Re-Alignment

Many of these projects are contained in Table 3.2-1 of the Plan, Consistency of the BDCP with Requirements of Recent Biological Opinions and have separate EIS processes are also tracked in a DWR Annual Report[118] and in via the listserve updates provided by the State.[119] FRP is a joint effort between DWR and CDFW to implement habitat restoration in partial mitigation for the State Water Project's (SWP) impacts on sensitive fish species in the Delta. These efforts are

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[112] "Planned FRP and other Tidal Habitat Restoration Projects For BiOps and ITP Compliance," DWR and California Dept. of Fish & Wildlife (CDFW). Fish Restoration Program: Habitat Restoration for the Delta (2010)

[113] DWR, "Notice of Preparation of an Environmental Impact Statement/Environmental Impact Report on the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project" (March 4, 2013). *Available at* http://www.usbr.gov/mp/BayDeltaOffice/docs/NOP_YBSHRFPP_03-04-2013MeganS.pdf

[114] DWR, CEQA Scoping Report: Prospect Island Tidal Habitat Restoration Project Environmental Impact Report, Fish Restoration Program Agreement (August 2013). *See also* Army Corps and DWR, Prospect Island Ecosystem Restoration Project Solano County, California Environmental Assessment/ Initial Study (June 2001).

[115] State and Federal Contractors Water Agency, Lower Yolo Ranch Tidal Restoration Project Final EIR (July 2013). Available at http://www.sfcwa.org/?attachment_id=873

[116] CDFW, Hill Slough Restoration Project Phase I - Preliminary Restoration Design, Environmental Documentation and Permitting (June 2013) Available at https://www.dfg.ca.gov/ERP/erp_proj_hill_slough.asp

[117] CA COASTAL CONSERVANCY, Staff Recommendation: RUSH RANCH MARSH AND UPLAND DESIGN AND MANAGEMENT [File No. 07-071-01] (November 8, 2007) Available at http://scc.ca.gov/webmaster/ftp/pdf/sccbb/2007/0711/0711Board04_Rush_Ranch.pdf

[118] DWR, Fish Restoration Program Annual Report (Dec. 2013) Available at http://www.dwr.water.ca.gov/environmentalservices/docs/frpa/FRP_Annual_Report_Final_and_signed_Jan%202014.pdf

[119] To subscribe to the quarterly "E-news" update from FRP, the DWR website advises contacting Dan Riordan, Chief, Fish Restoration Program. See: http://www.dwr.water.ca.gov/environmentalservices/frpa.cfm

being undertaken to satisfy requirements of recent Biological Opinions for SWP and Central Valley Project (CVP) operations. FRP is also intended to address the habitat restoration requirements of the CDFW Longfin Smelt Incidental Take Permit (ITP) for SWP Delta operations.

The BDCP EIR/EIS does not appear to discuss these separate processes, their relationships, similarities, or differences in terms of impacts and mitigations as they relate to similar/same projects in CMs 2-22. Even though these projects are currently being analyzed at the Project Level, the BDCP claims to only be able to provide Programmatic Level details on these projects. Because information about these projects is readily available, any projects listed in CMs 2-22 that have separate environmental analyses currently being conducted, particularly CM2 and Prospect Island in CM4, should be analyzed at the Project Level instead of Programmatic.

Many of these habitat projects propose to breach, move, remove, inundate, vegetate, or otherwise encroach upon SPFC and Delta levees and bypasses and therefore require their flood impacts to be fully analyzed in the EIR/EIS. Of particular interest to the Association's members is the true nature, scope, intent, location, and severity of impacts associated with these related habitat restoration projects.

RECOMMENDATION – The Plan must be amended to incorporate more detailed Project Descriptions of CM2-10 projects that currently have separate Project Level Analyses being prepared and amend the EIS to incorporate more of the Project Level analyses information for the cross-over projects of the Fish Restoration Program (Plan Table 3.2-1) and disclose the Project Level impacts identified these separate analyses.

X. DEFERRED ANALYSIS OF FLOOD IMPACTS TO USACE PERMITTING FAILS TO DISCLOSE SIGNIFICANT PUBLIC SAFETY RISKS

A. Analysis, Disclosure, and Mitigation of Restricted Flood Flows Inappropriate

Misleading conclusions and missing impacts associated with Alt 4 that would affect flood management adversely are common throughout the EIR/EIS, mostly because studies about the existing baseline conditions and the Project's impacts are deferred to a later time. This means the development of any necessary mitigation measures are also delayed, preventing meaningful assessment of the project's potential public safety and property impacts.

An example of when insufficient information being provided leads to incorrect or misleading conclusions is found in SW-2. While it may be true that Alt 4 "would not result in adverse effects on flood management" or "an increase in potential risk for flood management" in terms of "Changes in Sacramento and San Joaquin River flood flows" as stated in the title of Impact SW-2, the current wording in that section is too broadly stated, leading the reader the impression

there is no other flood management risks created by Alt 4 which is not true. There are in fact other effects on flood management from Alt 4 from CM1-4 in particular associated with increased erosion and seepage which result in additional costs to local levee maintaining agencies to repair and maintain.

Yolo Bypass Flood Management, lines 38-40 states: "***CEQA Conclusion:*** Alternative 4 would not result in an increase in potential risk for flood management compared to Existing Conditions when the changes due to sea level rise and climate change are eliminated from the analysis." "No mitigation is required." The EIS/EIR's simple, narrow focus on only how much flood flow channel capacity the proposed project would utilize fails to recognize that the existing flood facility (Yolo Bypass) is already not performing to design conditions as mentioned in a previous comment on 1986 flood event exposing flood flow capacity concerns at the south end of the Yolo Bypass.

In addition, the EIR/EIS appears to have made the conclusions of no impacts from Sacramento River peak flows based on existing channel capacity and therefore failed to analyze what the new cfs flow on Sac River from Freeport to Courtland due to lost in-river channel capacity of 16.21 acres of in-water habitat during construction which includes installation of at least 5 cofferdams (3 North Delta intakes, Fremont Weir, and Walnut Grove barge dock) in the Sacramento River with a 12.3 acre in-water permanent footprint (EIR/EIS, Fish and Aquatic Resources Chapter, page Part 3 – 11-1). This narrowing of the Sac River will certainly constrain and reduce the current flood flow capacity, but does not appear to have been analyzed in the EIR/EIS.
The narrowing of channel and reduction of cfs capacity for flood flows will put additional strain on levees in terms of erosion and available freeboard during a high water event.

Therefore, there is no tolerance for even small increases of 1% in some areas without compromising public safety. Before more stress/increases in peak flows can be added, mitigation work to improve the current flood capacity in some channels and reaches will need to be done first (prior to construction or water ops implementation). The costs for structural or non-structural solutions and ongoing maintenance to reduce the risk level of flooding increased due to BDCP should be fully paid for by BDCP at no cost to the local levee maintaining agency (RD), landowners, or county governments.

RECOMMENDATION – The EIR/EIS needs to include an analysis of how much the Sac River is narrowed between Freeport and Courtland, quantify the loss of cfs capacity, identify any freeboard or levee stability/strength deficiencies that would be created by erosion impacts due to more narrow channel to accommodate peak flood flows for levees on both sides of the rivers as well as upstream and downstream from CM1 facilities, and offer specific mitigations to address this reduced flood management capacity impact.

RECOMMENDATION - The reduced flood flow capacity in a four mile plus stretch of the Sac River due to construction of CM1 needs to be quantified, analyzed and mitigated with improvements to levee heights and stability which may require rocking or landside berms on both sides of the river to be paid for by BDCP. What will the width of the channel and the cfs capacity on the Sacramento River between Freeport and Courtland after conveyance facilities in CM1 are constructed? This is critical mitigation as the levees on both sides of the river are project levees that are part of the State Plan of Flood Control.

RECOMMENDATION - The EIR/EIS should provide analysis and conclusion regarding how much the proposed water operations in Alt 4 increase flood risk above and beyond what is predicted impact from sea level rise/climate change.

B. Improperly Defers Analysis of Impacts

A lead agency must identify all significant effects on the environment caused by a proposed project that cannot be avoided. The EIR/EIS cannot defer the determination of the scope and nature of significant impacts until future studies and reports are prepared without including specific performance standards, timeframes for completion, and a commitment to mitigate.

The EIR/EIS relies extensively on deflecting the responsibility of properly analyzing impacts by deferring the environmental analysis of CMs2-22 to a later time and onto other agencies, which leaves our agency with inadequate information to fully assess the direct, reasonably foreseeable indirect, and cumulative impacts of a proposed action under the Preferred Project.

For instance, reliable surface water resources impacts to in-Delta water users cannot be accurately determined pursuant to this EIR/EIS because Section 6.3.1.4 discloses that the changes in SWP/CVF surface water resources under this analysis are only evaluated at project level if sufficient detail was available, and could only make assumptions regarding the location and extent of tidal marsh restoration because it is only analyzed at a programmatic level in this EIR/EIS. Therefore, the true environmental impacts on in-Delta water users is insufficient for our Agency to determine if the mitigations offered are sufficient or not until the project level environmental analysis is provided. The information is far too general, even for a programmatic document, to enable decision-makers to make findings as to whether particular mitigation measure would be effective and enforceable, much less whether they would be feasible.

A specific example if Mitigation Measure SW-4 (from Alt 1A) which fails to meet this standard according to the following language used:

- *"will have to demonstrate"*
- *"will implement measures"*

- *"will design and implement"*
- *"Drainage studies will be prepared"*
- *"to assess the need for, and to finalize, other drainage-related design measures"*
- *"Based on study findings, if it is determined"*
- *"will design measures*
- *"will be conducted"*
- *"management plan will be prepared and implemented during construction."*

The wording above is replete with vague and ambiguous language in terms of what kind of measures or actions will be implemented, cannot meet any performance standards such as "no-net-increase" or "prevent an increase" because the impact analysis fails to include a description of the baseline conditions that were used to determine the impacts associated with altering drainage patterns and increasing the rate or amount of runoff, failed to provide details about what the studies or management plans should include, and as a whole defers any and all formulation of specific mitigation actions in specific locations and to specific harmed parties to some future date such as during construction itself.

It is inappropriate and insufficient to assume that the details of mitigation to be fleshed out at a later date will be adequate to address the impacts. Further, Mitigation Measure SW-4 fails to account for and analyze impacts resulting from BDCP if the future studies and management plans are not completed before adverse impacts begin occurring or to identify the extent of these studies and management plans or their costs and how they will be paid for.

Mitigation Measure SW-4 is therefore inadequate, incomplete, and not sufficiently specific and mandatory in order to be fully enforceable.

C. Description of Known and Likely Permit Mitigations Should be Disclosed in Project Description

According to construction descriptions of CM1, there will be at least 9 cofferdams in the Sacramento River and tributary channels during construction of the 3 new North Delta intakes, six barge loading docks, and possibly modification of Sacramento Weir too which would make a total of 10 cofferdams. The three intake locations will be on the east-bank of the Sacramento River between about Clarksburg and Courtland and the six barges both on the river and following channels (Sacramento River is about 700-feet wide near the three intakes, leaving approx. 380-580 feet open for navigation and flood flows during the 4-6 year construction period):

1) Sacramento River near Georgiana Slough in Walnut Grove;

2) North Fork Mokelumne River that connects the Walnut Grove area with the lower Mokelumne River and San Joaquin River;
3) San Joaquin River south side of Venice Island on bend east of the DWSC;
4) Middle River east side of Bacon Island 2 miles south of Connection Slough;
5) and two on Woodward Canal on north and south sides of canal on Woodward and Victoria Islands that will essentially block off the entire channel.

The primary methods of mitigating the reduced flood flow capacities is to either setback the levees on the other side of the intakes/barge facilities or raise the height of levees on both sides of the river or channel to accommodate the higher surface water levels:

- Water surface elevations upstream of the cofferdams could increase under flood flow conditions by approximately 0.5 foot relative to EC and NAA, which may require installation of setback levees or other measures to prevent unacceptable increases in river water surface elevations under flood-flow conditions, reverse flow areas, high velocity areas causing scour and erosion, and reflection of flood waves towards other levees. (*EIR/EIS, Surface Water Chap 6)*

Both options are extremely expensive with the setback levee option costing more money and time due to the need to condemn properties and move county roads. Similar work done by SAFCA in Natomas cost over $600 million for construction of an adjacent setback levee including seepage berms, relief wells, and cutoff (slurry) walls. Installing seepage berms involve the placement of new dirt on the land side of the levee to minimize the influence of water seeping from the river underneath the existing levee, which can undermine the levee stability. The relief wells also remove water from beneath the levee foundation during elevated river stages and the cutoff (slurry) walls are low permeability wall constructed within the levee embankment to reduce the seepage of water under the levee.

Either way, the fact that the mitigations necessary to have flood-neutral impacts as required in USACE and CVPBD encroachment permits for construction of the intakes and barge facilities are known by the BDCP Lead Agency, those projects should be fully described. This is particularly important since installation of at least one of the intakes will be across Clarksburg and require the removal of houses and possibly businesses too.

The avoidance of describing the significant environmental impacts similar to the one described above is a common occurrence due to many of the impacts and potential mitigations requiring studies to be conducted to some future deferred time. This prevents the Association's members as local maintaining agencies to understand the true nature, scope, and intensity of CM1 or any of the other 21 Programmatic Conservation Measures. In fact, there is no way for RD 999 which

maintains the west-bank Project levees to know that BDCP plans to set back an extended length of a portion of the system they are responsible.

The RDs, affected landowners and Clarksburg and other Delta residents should not have to wait until BDCP is seeking USACE and CVFPB encroachment permits to find out that Alt. 4 intends to setback their levee.

RECOMMENDATION – The Plan and EIR/EIS should describe the known mitigations that will likely be required in separate permits, like the USACE and CVFPB, requiring setback of levees on other side of intakes in order to assure accommodation of flood flows during the 9-10 construction period of CM1. This analysis should also disclose how many additional acres will have to be condemned on other side of the river, describe how existing levee road will be relocated and traffic volumes and flows changed over there, whether these impacts are considered "permanent," and if and how the impacts from these mitigations need to be additionally mitigated.

RECOMMENDATION – Noticing and consulting with the numerous RDs that would be affected by setback levees proposed to offset the flood impacts of the 9-10 CM1 cofferdams should be immediately initiated and discussions completed prior to certification of the EIR/EIS.

D. Fails to Provide Substantial Evidence to Support Impact or Mitigation Conclusions

Under CEQA the lead agency's factual conclusions must be supported by substantial evidence – facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15384(b)). Speculation does not constitute substantial evidence, and unsubstantiated narrative or expert opinion asserting nothing more than "it is reasonable to assume" that something "potentially may occur" is not analysis supported by factual evidence (e.g.; 2,600 dewatering radius).

- **Conclusions Lack Evidence**

There are too many chapters and individual impact statements that rely on conjecture instead of providing evidence to support the CEQA/NEPA conclusions to list them all, so the following will serve as an example of this systemic problem found throughout the EIR/EIS:

For instance, Impact SW-8 cannot conclude that Alternative 4 will "not result in an increase to exposure of people or structures to flooding due to construction of the operations of habitat restoration facilities" simply by complying with USACE, CVFPB, and DWR requirements. The impact findings must specify what physical design features, standards, requirements, and

operating criteria that are required under those permits that apply to each element/feature of each of the habitat measures that will be constructed.

The conclusions in the EIR/EIS must be supported by substantial evidence – actual facts. Unsubstantiated narrative or expert opinion such as the following asserting is not analysis supported by factual evidence:

- *"could increase flood potential"* ***Page 6-61, lines 30-31.***
- *"these potential increases"* ***Page 6-61, line 35.***
- *"action could also reach"* ***Page 6-61, line 36.***

What is the scientific background upon which these assumptions are made? Where are these assumptions anticipated to occur? Are these impacts anticipated to occur more frequently than existing conditions? If so, how much more often and when?

XI. MISCELLANIOUS EIR/EIS PROBLEMS

E. Inadequate Modeling to Evaluate Flood Capacity Impacts

Evaluation of flooding in the Sacramento and San Joaquin systems requires flood modeling from the Delta all the way up to the highest reaches of the levee systems. The State is currently developing models to perform this type of operation. The BDCP must utilize these models in order to adequately evaluate the impacts that any habitat or other changes within the flood system under BDCP.

In the meantime, the BDCP should utilize the hydraulic analysis in the CVFPP and other recent DWR System-Wide evaluations to analyze the impacts that BDCP features such as 9 cofferdams, levee moving and breaching, reverse flows, and other Conservation Measure impacts will have on preventing flood flows from being blocked, constrained, or otherwise redirected in unsafe ways that increase risk of levee failure from overtopping, scouring or other detrimental impacts.

RECOMMENDATION – Request that BDCP Consultants use existing analyses and modeling available in the CVFPP, other DWR flood risk evaluation studies and reports, or modeling by the CVFPP such as the 2-D modeling of Sutter Bypass to evaluate the flood flow patterns and regimes to be created by BDCP water conveyance operations, including the affects of vegetation growth in bypasses and flood flow capacities constricted by cofferdams.

RECOMMENDATION – Request the BDCP do new modeling runs (including hydraulics) and effects analysis using newer CALSIM model and specifically reporting in the EIR/EIS the hydraulic impacts in terms of locations, intensity, duration, and timing.

F. EIS Fails To Provide Adequate Summary Section (NEPA § 1502.12)

NEPA requires that an EIS contain a section summarizing the statement. The summary is specifically supposed to stress:

- Major conclusions;
- Areas of controversy (including issues raised by agencies and the public);
- Issues still pending resolution (including the choice among alternatives).

It took a lot of searching, but we finally found Section ES.7 *Areas of Known Controversy and Issues to be Resolved* that listed controversial issues, but provided no discussion of the unresolved issues. This is particularly concerning in light of the long list of unresolved issues in the Federal Red Flag comments and those submitted by Cooperating Agencies. Chapter 1 *Executive Summary* Section ES.1 *Introduction* describes the purported benefits of the proposal, but we could not find a description of the EIS' major conclusions.

Based on the Plan's Effects Analysis and the 750 impacts with 52 of them "Significant and Unavoidable" in the EIR/EIS including 7 Unavoidable Impacts in the Water Quality Chapter that cumulatively result in creating an Unavoidable Significant Impact in the Public Health Chapter, there are certainly some very serious environmental impacts imposed on the natural and human resources in the Plan Area that warrant a comprehensive and coherent discussion for the public to understand the full extent of the scope and nature of the proposal.

RECOMMENDATION – Request a separate *EIR/EIS Summary of Conclusions, Unresolved Issues, and Known Controversies* Section that includes all three of the elements listed in NEPA Section 1502.12 be drafted and included in the EIS.

RECOMMENDATION - Request the Lead Agency add a comprehensive summary section to the EIS that describes the major environmental impact conclusions made, including a comprehensive and coherent discussion of whether the 750 impacts, including the 52 "Significant and Unavoidable" adverse impacts outweigh the purported benefits. This can only be done if consistent with NEPA Section 1502.14, the summary provides an objective comparison of the benefits versus adverse impacts to see if one side is weighted heavier than the other.

RECOMMENDATION - Request the summary prepared in accordance with (NEPA § 1502.12) be more descriptive by specifically including as outstanding issues the need to analyze, disclose, and mitigate the extensive system-wide impacts posed by the reconfiguration and modification of the SPFC as an interconnected flood protection system.

RECOMMENDATION – Request the summary also include the analysis of the cumulative impacts associated with pile driving, dewatering, drainage system interference, and levee road degradation will have on the ability to maintain levee integrity and PL 84-99 eligibility.

G. Inadequate Project Description

NEPA requires that the proposal in an EIS is properly defined (§ 1502.4(a)). Under CEQA, the fundamental purpose of an EIR "is to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." (CEQA Guidelines §15003(d), citing *People ex rel. Department of Public Works v. Bosio* 1975.

However, every chapter the Association reviewed in the Draft BDCP EIR/EIS fails to evaluate the severity of many of the adverse environmental impacts that will result, directly or indirectly, from BDCP despite requirement of CEQA that the agency explore, disclose, and analyze what the actual impacts are, where they will occur, who they will affect, to what extent they can be mitigated, and whether alternative actions can reduce the project's significant impacts.

Understanding the overall Project description is further complicated by bifurcating the Plan into project ready and programmatic environmental analysis of the CMs precludes any meaningful analysis of the foreseeable environmental impacts and obscures the true scope of the project (CEQA Guidelines §15384), thereby preventing meaningful CEQA review and thwarting CEQA's disclosure requirements and precluding the informed decision-making required (CEQA Guidelines §15384).

The incomplete and shifting nature of the project description was further exacerbated by the overhaul of the CM1 Project description twice, including most recently in mid-August 2013. This results in the Plan and EIR being unclear whether it is referring to its originally proposed project (15,000 cfs Surface Canal), Alt. 1A (15,000 cfs underground tunnels with 5 intakes), Alt. 4 (9,000 cfs tunnels with 3 intakes), or the revised Alt. 4 (9,000 cfs tunnels, 3 intakes, smaller/moved intermediate forebay, moved tunnel alignment). Failure to provide an accurate, stable, and finite project description is a prejudicial abuse of discretion (PRC §15378 and CEQA Guidelines §15124).

As a result, the level of project analysis of CM1 is vague, has confusing and has contradictory physical and construction design and location descriptions throughout chapters of Plan and EIR/EIS that are literally all over the map, doesn't include baselines to evaluate impacts against, state conclusions without providing any evidence of support, fails to provide site-specific information that identifies the extent, severity, duration, locations, timing, amounts, etc. Same can be said about the level of analysis for mitigations in terms of baseline existing conditions, vague descriptions of remedies, conclusions regarding significant or not lack evidence to support. Most impacts and mitigations are merely guesstimates by consultants without any evidence to validate their validity.

It is incorrect to say that specific components and detailed descriptions and timing and implementation of CM 2-22 are provided, since they are only evaluated at the program level and lack specific project information to allow an adequate impact analysis, effects, or appropriate level of mitigation. In fact, page 1-13, lines 12-14 states: "Design information for CM2-CM22, which include restoration and conservation strategies for aquatic and terrestrial habitat and other stressor reduction measures, is currently at ***more of a conceptual level***." [emphasis added] Further, page 1-13, lines 18-19 states: "authorization of CM2-CM22 may not occur until a later date, ***when more detailed design information is available***. [emphasis added]

A more specific flood-related example is the project description and level of environmental analysis lacks sufficient details regarding the existing baseline conditions, locations, time periods, quantity of runoff and discharges from dewatering activities, and duration of these discharges to determine whether Impact SW-6 in fact properly captures and characterizes the full extent of drainage overflows and localized surface flooding from runoff created by several square miles of construction and dewatering activities anticipated in CM1.

Therefore, Association finds it impossible to provide comprehensive or complete comments on the EIR/EIS or evaluate the cumulative impact of various projects due to the lack of a adequate detail in the project description and failure to provide specific performance targets such as, but not limited to, flood flow amounts and velocities, drainage volumes and locations from dewatering, the number of CM construction trucks (and other equipment) traveling over roads, or the levee conditions underneath the most heavily used roads for Alt. 4.

H. Inadequate Baseline Description Prevents Proper Analysis of Impacts

A fundamental flaw found in every chapter we reviewed in the EIR/EIS that prevents assessment of the Project's environmental impacts on the flood control system in the Plan Area is a failure to adequately describe the baseline conditions or compare with the Project design and operations.

A proper environmental analysis of a project of this size and long-term (10 year) construction timeline needs to provide an accurate, stable, and finite description of the project and the existing baseline conditions used to determine the significance of environmental impacts in order to allow the public or a cooperating agency to determine the true nature and extent of the actual impacts likely to be caused by the Project. Generally most of the Impact statements contain little to no description of the existing baseline conditions that were used to determine impacts; or where the direct and indirect impacts will occur; or to account for changing conditions that are likely to occur prior to or during the 10-year construction time period.

The EIR/EIS did not even use the state's CVFPP and EIR/EIS, recently adopted in 2012, to identify the 1957 design flood flow of the SRFCP as a baseline condition, let alone identify portions of the flood protection system that don't currently meet the flood project's design flow.

In addition, the analysis failed to: 1) study/review existing maps of the island drainage systems and determine where and for how long disconnections will occur and how they will affect the functionality of the rest of the drainage system to prevent localized flooding of entire island's population, structures, and farmland (drainage maps are readily available at DWR); 2) to provide a specific repair/reconstruction options to avoid/fix the disconnected drainage systems; 3) to provide assurance that the repairs will be paid for by BDCP; 4) to identify lands and land uses that will be adversely affected by localized flooding; 5) or disclose the nature and extent of any of these impacts.

Maps that are readily available at DWR and possibly the reclamation districts and other public agencies of the Delta island's existing irrigation and drainage system facilities and their capacity capabilities including size of pumping stations, seepage profile, groundwater levels, stormwater detention basins, where people and properties are located and vulnerable to damage from localized surface flooding, as well as FEMA floodplain maps. These are critical baseline materials to understand the existing conditions as well as determine locations where existing facilities will be disrupted/disconnected/overloaded by the project activities.

I. Wrongheaded Assumptions About Levee Failures Results In Incorrect Export Water Supply Conclusions

It is not reasonable for the EIR/EIS environmental analysis to make the following assumption:

"expect that long-standing and regulatory mandates could be altered to provide the ability to pump water for SWP and CVP under emergency conditions resulting from the reduced water supply conditions related to a seismic event."

Unless the specific alterations to these regulatory mandates are included in the BDCP permits, then this is NOT an action the EIR/EIS can "expect" to occur. This is an arbitrary and capricious assumption that the EIR/EIS inappropriately makes, obfuscating the actual significant environmental impacts to SWP/CVP water supplies.

RECOMMENDATION – The EIR/EIS should either add an Impact to Water Supply Chapter regarding the unavoidable significant adverse environmental impacts to water supply under Alt. 4 due to remaining residual risk of levee failures from earthquake or sea level rise because no levee improvements included in any of the BDCP CMs and no new flood management bond money approved by California voters. The potential of a temporary shut-down of any SWP/CVP Delta water conveyance facilities during the 50-yr permit should be acknowledged in the EIR/EIS as an Impact to Export Service Areas in the Water Supply Chapter and provide a mitigation measures to provide BDCP funding for maintenance and improvement of Delta levees critical to the conveyance of SWP/CVP water supplies.

RECOMMENDATION - EIR/EIS should either add an Impact to the *Water Supply Chapter* regarding the unavoidable significant adverse environmental impacts to SWP/CVP export water supply under Alt. 4 due to residual risk of levee failures from earthquake or sea level rise that will result in a temporary shut-down of the South Delta pumps.

RECOMMENDATION – To avoid water supply impacts from Delta levee failures, the EIR/EIS should provide a mitigation to provide BDCP funding for improvement of Delta levees proportional to how critical those levees are to the conveyance of SWP/CVP water supplies.

RECOMMENDATION – Consistent with the DSC's Delta Plan RR-R2 to collect assessments on State infrastructure as part of their Delta flood risk management strategy, the BDCP EIR/EIS should include a mitigation that establishes a Benefit Assessment Fund in the BDCP's Annual Work Plan and Budget, Sec. 6.3.1, for payment of SWP/CVP's cost-share for maintenance and improvement of levees in the Plan Area critical to the conveyance of water to diversion and delivery facilities in the South and North Delta.

J. Separating Conservation Measures into Programmatic and Project-Level Project Descriptions Abuses CEQA/NEPA Purpose and Intent

Due to only one of the Conservation Measures purportedly being analyzed at a Project-Level, the EIR/EIS relies extensively on deflecting the responsibility of properly analyzing impacts by deferring the environmental analysis of CMs2-22 to a later time and onto other agencies, which leaves the Association with inadequate information to fully assess the direct, reasonably foreseeable indirect, and cumulative impacts of a proposed action under the Preferred Project on the flood protection system in the Plan Area.

The cumulative effects of conveyance construction with the Programmatically analyzed habitat projects could pose far greater increases in risks of flooding and could therefore threaten lives and property if not properly accounted for and mitigated in the EIR/EIS.

Reliable surface water resources impacts to in-Delta water users cannot be accurately determined pursuant to this EIR/EIS because Section 6.3.1.4 discloses that the changes in SWP/CVF surface water resources under this analysis are only evaluated at project level if sufficient detail was available, and could only make assumptions regarding the location and extent of tidal marsh restoration because it is only analyzed at a programmatic level in this EIR/EIS. In addition, the information is far too general, even for a programmatic document, to enable decision-makers to make findings as to whether particular mitigation measures would be effective and enforceable, much less whether they would be feasible.

RECOMMENDATION – Require a permit condition that prohibits construction of any BDCP habitat measures if they will significantly increase flood risk when combined with the

conveyance construction flood risk impacts and require alterations to water ops and deliveries as an alternate solution to any reduction in flood protection created by the habitat project. Or permits could instead require BDCP to fully pay for appropriate mitigation projects to reduce the flood risk to the same level of flood risk that would be increased by habitat project prior to its construction.

K. Inadequate Adaptive Management

The adaptive management process proposed in BDCP draft documents fails to describe how monitoring will be designed to establish cause and effect relationships between implementation of specific conservation measures or operation of new conveyance facilities and the type and magnitude of human impacts from those measures such as economic and public safety. Draft documents gives examples of a tidal marsh restoration project being reduced or discontinued or water operation being modified if its providing little benefit to covered species, however it does not explain what will happen if a habitat project or water operation results in causing economic or physical harm to humans in the Delta.

Due to the significant scientific uncertainties regarding the impacts from the construction and operation of new conveyance facilities and the implementation of habitat conservation measures in the Delta, the EIR/EIS must include an adaptive management process that includes modification of any conveyance or habitat project that result in human consequences, including reducing flood protection.

For instance, if the Fremont Weir project mentioned earlier is implemented and funding for vegetation maintenance in the Yolo Bypass is not available and a riparian forest starts growing in the Bypass, will the Plan adaptively manage the habitat measure to assure flood capacity is returned. Just as there is an adaptive management process for responses by covered species to the Plan's implementation, there also needs to be an adaptive management process to respond to negative human impacts caused by the Plan's implementation. Otherwise, this is not a complete adaptive management plan.

L. Significant Modification of the Sacramento River Flood Control Project Warrants U.S. Army Corps of Engineers Acting As Co-Lead Agency (NEPA § 1501.5(a)(2) and § 1506.2)

As discussed earlier, at least 10 of the 22 BDCP Conservation Measures propose to modify the location, configuration, and purpose of SRFCP facilities, particularly CM1 and CM2, including installing an operable gate on a flood facility (Fremont Weir) to divert water into the Yolo Bypass as part of CVP/SWP project operations as well as impacts to navigation. Consequently, the USACE has direct authority and responsibility over several actions in BDCP that have

overlapping dependence on conveyance of CVP/SWP export water with operation and configuration of the SRFCP and navigable waters in the Plan Area (§1501.5(a)(2))

In light of the extensive nature and scope of the changes proposed by water conveyance entities to the Central Valley federal/state flood protection system and navigable waters in the Plan Area, the U.S. Army Corps of Engineers should have a greater role in supervising the preparation of the BDCP EIS.

RECOMMENDATION – Reclamation Districts request the USACE be designated as a Co-Lead Agency on BDCP, reinitiate the NEPA environmental review process with the Corps sharing supervising responsibility for the preparation of the EIS.

XII. MITIGATION DEFICIENCIES

A. Proposed Mitigations Do Not Match The Impact Description, Leaving Many Adverse Impacts Unmitigated

The EIR/EIS Chapters we reviewed all included specific numbered impacts where the adverse impacts identified in the title and description were left unmitigated in the CEQA Conclusion. This type of oversight in matching the impact conclusions and proposed mitigations to the impacts described in the title and analyses description if the EIS was written in an analytic rather than encyclopedic manner as required by NEPA (§ 1500.4(b) and § 1502.2.2(a)) and keeping discussion of less significant issues shorter than the significant impacts (§ 1500.4(c) and § 1502.2(b)).

An example of which we saw many examples in every chapter reviewed, is the effects described in SW-5 fail to mention anything related to the impacts describing "altered drainage pattern," and instead only focus on surface water changes, including elevations and velocities. As a result the conclusion is both faulty and inadequate at it fails to include any identification of impacts associated with disconnecting existing drainage systems that will result in localized flooding and other adverse environmental impacts.

B. EIR/EIS Often Lacks Mitigations for Specific Impacts

Examples of detrimental natural resource and human effects associated with implementation of BDCP that fail to provide mitigation Measures to avoid or substantially lessen adverse impacts were in every chapter reviewed, but for brevity we will only describe one.

Mitigation Measure SW-4 is not only insufficient, but it is disturbing because the mitigation appears to be one-sided in that it only addresses the impacts to the BDCP facilities in terms of reducing runoff from paved areas and removal of sediment to keep the intakes operational, while ignoring the significant damage caused to surrounding lands, structures, people, and economy.

Since Impact SW-4 is very clear that the excavation, grading, stockpiling, soil compaction, and dewatering activities of CM1 will alter the intricate system of drainage patterns, paths, and facilities – then where is the mitigation to re-design and re-construct a new drainage system for the lands surrounding the CM1 facilities so that they can remain reclaimed and continue their current beneficial use of the land? Where is the mitigation to deal with the Impact SW-4 of changes in drainage flow rates, directions, and velocities caused by increased water added to the existing drainage system by dewatering activities? Where is the mitigation for impacts to species, recreation and in-Delta water supplies caused by impeding Sacramento River flows, creating changes in river/channel hydraulics, and increased water surface elevations? What about the impacts on local reclamation districts for increased levee maintenance costs for seepage and erosion damage caused by impeding river flows, changing hydraulic flows, and increasing water surface elevations?

Sedimentation and surface runoff from pavement impacts pale in comparison to the significant adverse impacts from disconnecting the existing drainage system and increasing water surface elevations and hydraulics.

As stated in Chapter 7 of the EIR/EIS, the existing drainage facilities are "intricate networks," which means they have been carefully designed and located to work with the natural drainage patterns on the island and to function as a system. Therefore, any disconnection potentially renders the whole system inoperable. Since Chapter 7 further confirms that successful agriculture is dependent on the operation of this drainage system and clearly states the island will become flooded without the drainage system, the impacts identified in SW-4 also apply to SW-5, and are significant and adverse to the ongoing agricultural productivity of lands adjacent to the BDCP habitat restoration areas facilities.

These impacts include: 1) localized flooding of homes/businesses and farmland that could result in loss of planted crops or prevent any crops from being planted that is exacerbated by the increase in runoff associated with the discharge of water from dewatering activities into local drainages (Impact SW-6) which increases the flows and water surface elevations; 2) increased costs to local landowners and reclamation districts to re-design and re-construct a functioning drainage system; 3) increased pumping costs to local landowners and reclamation districts to build new pumps in new areas and to drain the additional water put into the drainage system by any dewatering activities associated with habitat restoration.

This mitigation needs to address ALL impacts to ALL parties, not simply mitigate adverse impacts to BDCP facilities. This measure needs to be corrected to properly identify specific measures to be implemented on lands surrounding the CM1 facilities and in-river activities that are adversely impacted under Impact SW-4.

C. The Impact Disclosures and Conclusions Fail To Provide Supporting Evidence Of Environmental Analyses Conducted (NEPA § 1500.2(b))

A lead agency must identify all significant effects on the environment caused by a proposed project that cannot be avoided. However, the EIR/EIS must first perform a rigorous analysis that discloses the nature and extent of the impacts to support the conclusion that impacts are significant in order to provide the public and cooperating agencies with adequate information to fully assess the direct, reasonably foreseeable indirect, and cumulative impacts of a proposed action. There is no evidence identified in Impact SW-6 to support the adequacy of the conclusion that or provide the nature and extent of the impacts or their location, intensity, or duration. Wording such as:

- "could result in adverse effects"
- "if the runoff volume exceeds the capacities of local drainages."

The EIR/EIS fails to provide the comparison of the amount of the additional discharges from dewatering activities to the ability and capacity of the local drainages to accommodate, identify where and when localized will occur if dewatering discharges exceed the local infrastructure capacities, or how the additional dewatering activities will prevent farmers from keeping their lands sufficiently drained in order to grow crops. If there are lands that farmers will not be able to drain due to the drainage canals being full from CM1 dewatering discharges, then the loss of agricultural production is a significant adverse impact that needs to be acknowledged, analyzed and mitigated.

CEQA conclusion lacks credibility as is general and vague in making a blanket assumption without site-specific identification of where, for how long impacts will occur, or who will be impacted. Impacts are significant where? Significant for how long? Significant on whom? Will landowners adjacent and near construction areas experience flooding of their properties? Will reclamation district have increased pumping costs due to additional discharges by BDCP activities? Will there still be sufficient capacity for adjacent landowners to discharge their drainage? Will BDCP's use of local drainage facilities require approval or permitting by owners/operators of the drainage system?

D. Fails to Mitigate Pursuant to Federal Policy on PL 84-99 Eligibility, Particularly on Levee Vegetation

Many of the reclamation districts have opted to incorporate vegetation into levee design and management for non-Project levees in the Delta. The benefits can include reducing surface erosion to the levees and providing habitat value. Unfortunately, the current U.S. Army Corps of Engineers (Corps) vegetation policy prohibits vegetation on and around federal Project levees.

There are two logical implications of this Corps policy for implementation of several levee and

floodway vegetation actions presumed to occur in BDCP Conservation Measures.

RECOMMENDATION - The BDCP's Conservation Measures proposing any planting of vegetation on any SPFC facilities and floodways should emphasize that these projects should incorporate plants that will help provide bank stability near levees, albeit without encroaching into the clearance area designated by the Corps vegetation policy or impacting channel flow characteristics.

RECOMMENDATION – Request that any new habitat vegetation to be planted and managed that is an encroachment on SPFC facilities that would affect the eligibility under the USACE's PL 84-99 (RIP) either:

1) Be compliant with the USACE'S Vegetation ETL; [footnote: Corps' policy document #] or

2) HCP/NCCP permits must include a condition that planting of vegetation on any flood control facilities that is considered an encroachment upon the SPFC is prohibited until the BDCP Implementation Office is granted a waiver or approval of a SWIF [footnote: USACE memos on SWIF process and requirements] from the Corps.

RECOMMENDATION – Request the Plan and EIR/EIS acknowledge that the USACE's no-vegetation on Project levees policy is only one of dozens of potential federal PL 84-99 guidelines, such as structural encroachments and levee penetrations, affecting Project levees and flood facilities in the Delta. Accordingly, as a mitigation the EIR/EIS should require BDCP to develop an appropriate strategy how BDCP's modifications of the SPFC will ensure compliance with USACE's PL 84-99 and other conditions contained in the 1953 MOU with CVFPB.

XIII. ECONOMIC ANALYSIS AND FISCAL ASSURANCES

A. Transfers CVP/SWP Delta Export Water Contractor Costs to Public And Plan Area

There are significant inadequacies and inequities contained in the BDCP's current funding strategy that require substantial improvement and modification to prevent serious economic harm to the Delta region generally and the Plan Area specifically.

An in depth review of the BDCP's funding strategy reveals an intentional attempt to receive economic benefits that absolve BDCP Proponents of future responsibility to provide any future compensation, land, or water supply beyond what is specified in the Plan for the next 50 years while transferring costs for regulatory obligations of the federal Biological Opinions and absorbing economic and environmental degradation from 52 "significant and unavoidable" adverse impacts on to other parties. In addition, a disregard for financial obligations under the

Delta Reform Act, other Delta protection statutes, area-of-origin, and other responsibilities appears to be a systemic flaw in the BDCP's funding scheme as currently proposed.

For instance, the BDCP suggests the state and federal contractors are only responsible for 12.6 percent of the costs of CM4.[120] The rationale is that only a small portion of restoration occurring under CM4 is currently required by the USFWS Biological Opinion for the Long-Term Operational and Criteria Plan.[121] However, the BDCP fails to disclose that tidal restoration will also serve to mitigate the adverse impacts of locating new SWP diversion facilities to the North Delta – in effect, is mitigation for implementation of CM1. Indeed, according to the Plan Effects Analysis, CM4 and CM5 are necessary to reduce the frequency and severity of reverse flows created in the Sacramento River at the Delta Cross Channel and Georgiana Slough from the construction of new SWP pumping facilities in the North Delta (CM1). Accordingly, the cost of CM4 and CM5 should be borne by CVP and SWP water contractors, because these actions mitigate the operational impacts of the North Delta intake facilities (CM1), which solely benefits the water contractors at great expense to the Delta's water quality, environment, public safety, and economy.

Imposing the costs of most of the BDCP's Programmatic conservation measures on the general public when those activities should be funded by the BDCP Proponents certainly does not appear to be co-equal. Among other perks, these proponents receive the benefit of improved water quality and supply reliability, while Delta communities will deal with adverse impacts, including degraded water quality, community blight from building abandonment, and crippling of an agricultural paradise going back to the Civil War.

Even more valuable benefits directly accruing to CVP and SWP Delta export water contractors are conveniently glossed over in order to deflect BDCP costs onto others includes -- the 50-year HCP "No Surprises" rule[122] and the explicit NEPA Project Purpose, repeated many times throughout the BDCP documents, to "restore and protect the ability of the SWP and CVP to deliver up to full contract amounts."[123] This is partially achieved by maximizing water supply for SWP and CVP relative to the Annual Operating Plan according to the "Real-Time Operational Decision-Making Process" described in Plan Chapter 3, Section 3.4.1.4.5.

Under the No Surprises regulatory assurances, once the incidental take permit has been issued the federal government will not require additional conservation or mitigation measures, including land, water (includes quantity and timing of delivery), money, or other restrictions on the use of those resources covered in the Plan. (63 FR 8868) This means that if the status of a covered species in the HCP unexpectedly declines any time during the 50-year permit term, the primary

[120] BDCP, Table 8-41.
[121] OCAP BiOp
[122] 63 FR 8859, Feb. 23, 1998 (Section 14.0 of the BDCP Implementing Agreement)
[123] See, e.g., BDCP EIR/EIS Chapter 2.

obligation for undertaking additional conservation measures rests with the federal government, other government agencies, or other nonfederal water users and/or landowners who have not yet developed HCPs. So, if the BDCP fails to improve species or causes further decline of covered fish as predicted in the federal Red Flag comments, Delta and northern California water users may end up responsible for conditions caused by CVP/SWP operations.

- "[t]he USFWS and NMFS shall not require the Permittees to provide additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level provided for under the BDCP, this Agreement and the Federal Permits with respect to Covered Activities without the consent of the Permittees."[124]

Allowing the burden of new ESA regulatory actions to be the responsibility of other legal users of water for the next 50 years, expecting other landowners to sacrifice their property for habitat restoration, and asking other taxpayers to fund the BDCP while the economic and regulatory benefits accrue to CVP and SWP export service areas are unacceptable re-directed impacts to the Delta and Northern California region. They certainly are not co-equal by anyone's definition.

The nexus for the federal agencies providing these regulatory assurances are the purported benefits to be achieved by implementation of Conservation Measures, including CMs 2-22 which (according to Red Flag comments and the Plan's own Effects Analysis) are needed to offset the numerous significant adverse effects caused by CM1.

Another example of deflection of CVP and SWP costs onto other parties occurs in the discussion of Changed Circumstances in Chapter 6, where the Plan assumes the costs associated with the failure of a "non-BDCP" levee will fall on "the appropriate responsible entity" [125] – presumably Reclamation Districts via assessment revenues from their local landowners. What the BDCP fails to reveal, however, is that DWR (BDCP Proponents or some combination of CVP/SWP contractors) will most likely be the "appropriate responsible entity" pursuant to the substantial land acquisitions required for CM1 and many habitat conservation measures. As a result of its land ownership, or at least management by the Authorized Entities Group, BDCP will be responsible like any other local landowner for operation, maintenance, and failure of Delta levees – even "non-BDCP" levees.

The BDCP's obfuscation of this issue misleads the public by suggesting that the cost of remediation of a non-BDCP levee will not be part of the costs of the Plan. Moreover, while the BDCP suggests local reclamation districts will be financially responsible for reconstruction of restored areas in the event of levee failure, DWR and other Proponents have failed to analyze

[124] Implementing Agreement for the Bay Delta Conservation Plan, Section 14.3
[125] BDCP, p. 6-35.

whether any of these local reclamation districts have the resources or financial capacity to even reconstruct BDCP restoration areas. The BDCP should include such an economic analysis if the BDCP is going to rely on these local agencies to act as a backdrop in the event of levee failure. Otherwise the BDPC permittees cannot assure adequate funding for Changed Circumstances that may occur over the 50-year life of the Plan.

In addition, the BDCP anticipates that in the event of a levee failure, one possible corrective action would be to purchase and restore *additional lands* as a "replacement" project. Neither the BDCP nor the DEIR/EIS discusses the additional costs of purchasing replacement lands, nor do they discuss the additional natural resource and human impacts of taking *more* productive agricultural land out of production in the Delta in the event restored lands are lost to breaching of a levee from flood or earthquake. BDCP's failure to discuss these circumstances is quite troubling, particularly when DWR has been trumpeting the very likelihood of catastrophic Delta levee failure as creating the need for CM1. If such a catastrophe is so likely, surely DWR needs to have a financial plan in place, as a local landowner, to fund local Delta levees and prepare for the likelihood of having to replace large restoration areas – or risk being out of compliance with HCP/NCCP permit conditions for contributing to recovery of species.

In the aggregate, the aforementioned plethora of direct benefits accruing to CVP/SWP Delta export water contractors as a result of BDCP, as well as the expenses likely to be incurred by Delta communities, provide an argument for *all* Plan and EIR/EIS costs to be borne by BDCP Proponents and not general taxpayers or Delta residents.

RECOMMENDATION – Revise Plan Chapter 8 and the Implementing Agreement to clarify that in exchange for the benefits received (50-year shielding from ESA, explicit prohibitions from contributing additional flows from CVP/SWP for 50 years, explicit intent to deliver full contract amounts) BDCP Proponents are responsible for all costs associated with implementing conservation actions (including mitigation of actions) identified in Plan Chapter 3, Table 3.2-1 and all mitigation measures associated with construction and operation of CM1 including any other actions in the CMs that mitigates the impacts of CM1. Other examples include any costs associated for compensating injury to other parties harmed by implementation of BDCP conservation measures, including additional costs to RDs for O&M such as increased drainage pumping costs or levee repairs from CM1 construction traffic.

RECOMMENDATION - Insert a Table into Chapter 31 of the EIR/EIS that estimates the number of acres and approximate locations of lands to be used for mitigation of CM 1 so that local agencies with assessments, like the RDs can evaluate the potential revenue loss and seek payment under Water Code § 85089(b).

RECOMMENDATION - Require the Implementation Office to track and the Annual Progress Reports to disclose the number of acres that are purchased each year for "the construction,

location, mitigation, or operation of new Delta conveyance facilities" so that a proper accounting can be kept of the in-lieu property taxes and assessments that CVP and SWP water contractors are responsible for paying to local government agencies in accordance with Water Code § 85089(b).

RECOMMENDATION – Insert a condition into the HCP/NCCP permit requirements and Implementing Agreement requiring BDCP Proponents to also "pay for all property tax or assessments levied by local governments or special districts for all lands used in the construction, location, mitigation, operation, maintenance, or management of BDCP habitat conservation projects and activities." This commitment should be additionally memorialized by executing MOUs with each local agency with affected revenues upon purchase of BDCP-related lands in impacted agency's jurisdiction. The commitment must provide for increases in the rates due to inflation and other economic pressures.

RECOMMENDATION - Mandate, via a requirement inserted into the Plan Chapter 8, that the CVP and SWP Service Contractors be financially responsible for paying all local in-lieu property assessments to RDs for all lands purchased for purposes of complying with habitat restoration mitigation requirements such as:

- Fish Restoration Project Agreement (FRPA);
- Federal Biological Opinions for jeopardy associated with the continued operation of existing SWP and CVP South Delta pumps;
- OCAP, or any other regulatory requirements to meet existing statutory fish-doubling requirements as obligations under the CVPIA.

B. Requires Comprehensive and Unbiased Economic Evaluation of BDCP

To be credible, the BDCP economic analysis and EIR/EIS must provide a more robust and comprehensive analysis of how the socioeconomic impacts of implementing BDCP affects the ability of local agencies such as RDs to perform their statutory functions.

Cost Capacity

Neither the Plan's finance chapter nor the EIR/EIS even broach providing any sort of cost analysis of the annual budgets for Reclamation Districts in the Delta or even a typical annual budget in order to evaluate the ability of districts to weather redirected impacts from BDCP actions affecting their revenues and ability to perform their O&M responsibilities.

We have not polled our members, but a rough estimate of the average annual budget that many RDs have for levees is probably about $50,000/year out of a total annual district budget of

$120,000. This budget must cover other costs such as cleaning ditches as part of maintenance and paying electricity bills to pump water off of the island/lands to keep the lands drained and reclaimed so that they can be put to productive use (which in most cases is farming). The average subventions claim by a district is about $200,000, which is roughly a cost of $50,000 to the district (their 25 percent cost-share with the state).

The cost analysis included in the EIR for the Delta Stewardship Council's Delta Plan estimated costs of $1.5 million per mile to improve an existing levee to a setback (page A-1 of Appendix A) and the total cost estimate of $31 to $68 million per mile to build a setback levee. The costs of levee improvements to provide 200-year flood protection for urban centers of the Plan Area (i.e., Stockton, West Sacramento) to range from $5.4 to $25 million per levee mile, and the cost of a new floodwall would be approximately $9.4 million per levee mile, with the incremental cost incurred by a local or state agency required to provide 200-year levee protection rather than 100-year to be about $6 million per levee mile.[126]

These costs clearly exceed the capacity of the annual budgets of RDs in the Delta and in some cases the total value of the land. Concerns regarding the capacity of Delta RDs to bear the additional costs associated with redirected impacts or any expectations to cost-share in expensive projects such as setback levees necessary to offset the flood impacts of the CM1 encroachment into the Sacramento River need to be mitigated in the EIR/EIS.

General Public Benefit

If a reclamation district had to increase its assessment to pay for building setback levees or construct slurry walls to prevent seepage from BDCP habitat restoration, they would be required to receive voter approval pursuant to Prop. 218. Unfortunately, Prop. 218 only allows the assessment to be based on the special benefit each parcel receives. The public benefits that accrue to others outside the assessment area such as the expanded floodplains and riparian habitats are beyond the scope of Prop. 218. It is also inappropriate for Delta property owners to be assessed to increase riparian habitat that other entities such as the State Water Project, Central Valley Project, or water contractors that export water from the Delta could claim as credits to be applied toward the habitat acres they are required to produce to maintain their ESA/CESA take permits for the South Delta Pumps or as habitat credits under the BDCP.

Finally, the BDCP has failed to follow existing state and federal guidelines regulating the comprehensive cost-benefit analyses to be conducted for public water projects: "Economics and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (P&G) and the "Department of Water Resources Economic Analysis Guidebook." DWR's Guidebook specifically states: "DWR should also broaden the economic analysis to

[126] Delta Plan, Page A-3

include regional economic development (RED) or other social effects (OSE) accounts, which can significantly assist in the decision-making process. The RED account is particularly important if a proposed plan will have significantly different effects upon regions that might otherwise be irrelevant to the NED national perspective." As described in comments herein, the BDCP certainly represents different benefits and impacts between Northern and Southern California, which should be accounted for as RED or OSE – but is not accounted for in this way.

RECOMMENDATION – DWR must undertake objective and comprehensive cost-benefit and socioeconomic analyses. The new effort must be consistent with government economic analysis standards and independently peer-reviewed for accuracy and efficacy of the methodology, assumptions, models, and results. The independent analysis should specifically describe, analyze, and quantify the adverse impacts to the Plan Area (Delta) that are identified in the EIR/EIS, such as:

- Cumulative impacts to levee stability and Delta flood risk from CM1 pile driving, dewatering lowering groundwater 10-20 feet, sediment loading, 9 cofferdams in the Sacramento River and tributaries, and damage from erosion, seepage, and overtopping;
- Cumulative impacts to Delta agriculture from land conversion, seepage damage, water quality degradation, soil contamination (salinity absorption), blocked access to parcels, and reduce water elevations (surface and groundwater) stranding diversion intakes and wells;
- Cumulative impacts to in-Delta water supply (agriculture and drinking water) from 7 significant and "unavoidable" adverse impacts identified in *Water Quality Chapter 8*.

RECOMMENDATION – The Plan and Implementing Agreement should include a permit condition that BDCP Proponents bear the financial responsibility for expanding floodplain and riparian habitat, including ongoing maintenance for areas credited towards meeting the Plan's Conservation Strategy's goals and objective, including costs associated with increased costs imposed upon adjacent owners and agencies to accommodate expanded habitat and regulatory obligations as a result of the presence of new or expanded habitat conditions.

RECOMMENDATION - The Plan and Implementing Agreement should include a permit condition requiring BDCP Proponents to execute a MOU with local RDs and the CVFPB to pay the increased levee improvement, rehabilitation or reconstruction and ongoing O&M costs incurred as a result of constructing CM1 and creating habitat restoration areas.

C. Need To Establish Reliable and Durable Funding Sources

The BDCP EIR/EIS acknowledges that multiple Conservation Measures would impact the State Plan of Flood Control. Specifically, CM2, CM4, CM5, CM6, CM7, CM8, CM9, CM10, and CM12 have enough overlap with the State Plan of Flood Control that the BDCP EIR/EIS

contemplates appropriating Proposition 1E money earmarked for the State Plan of Flood Control.[127] The acquisition of 158,000 acres of property in the Plan Area (Delta) to create habitat will result in the transfer of ownership from private to public, resulting in substantial local government tax and assessment revenue losses to special districts such as RDs.

The Delta Reform Act approved by the State Legislature in 2009, includes a specific statutory requirement for BDCP to enter into contracts (or make other arrangements) to pay full mitigation of property taxes and assessments levied by local government agencies and districts for all lands used in the construction, location, mitigation, or operation of CM1, the new Delta conveyance facilities.[128] The BDCP Proponents should to enter similar binding agreements with local agencies for the acreage in the Plan Area proposed for habitat restoration, particularly since most of these acres are existing regulatory requirements of the CVP/SWP as acknowledged in Table 3.2-1 of the Plan, "Consistency of the BDCP with Requirements of Recent Biological Opinions."

There is zero benefit to the reclamation districts or the landowners who pay their assessments from widespread restoration of habitat in the Plan Area for incidental take permits for the operations of CVP and SWP Projects, but the loss of assessment revenue as a result will be fiscally devastating to the districts' annual revenues which are solely dependent on assessments collected from landowners. This is particularly true for Delta RDs which are relatively small in terms of acreage and residents from which to collect revenues for their operating budgets.

We are very concerned about any re-directed financial costs that are imposed on Delta RDs as a result of impacts associated with the 50-year implementation of the BDCP. Every dollar a district has to spend to offset detrimental impacts caused by BDCP actions is a dollar not spent on critical levee construction projects to reduce the risk of flood and consequent loss of life and property.

This is a serious matter, particularly considering the precarious and elusive nature of the BDCP's ability to fully fund permit activities, particularly the Programmatic Conservation Measures containing habitat restoration actions, is illustrated by the failure of the Plan identify reliable sources of money to pay the Project costs disclosed in Chapter 8, despite state and federal laws requiring a fiscally sound funding plan for HCPs and NCCPs.

Section 10 of the ESA requires the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to ensure the applicant for an incidental take permit (ITP) has sufficient funding available to implement an HCP,[129] including specifying the sources of funding to implement mitigation measures to minimize impacts to the covered species in the

[127] See BDCP EIR/ EIS, Table 8-48. Proposition 1E Funding Opportunities
[128] CA Water Code § 85089(b)
[129] 16 U.S.C. Sections 1539; *Southwest Center for Biological Diversity v. Bartel* (S. Dist. Cal. 2006) 457 F.Supp. 2d 1070, 1105.

plan.[130] Where perpetual funding is required to implement any mitigation measures, the HCP must establish programs or mechanisms to generate those funds,[131] because an applicant for an ITP cannot rely on speculative future actions of others to fund activities related to an HCP.[132]

BDCP has been criticized in recent independent science reviews and intensively questioned by the Delta Stewardship Council for its policy of relying on future water bonds being approved by California voters, particularly given the multiple delays in getting a water bond drafted in 2009 to even appear on the ballot. The precariousness of BDCP's funding is exacerbated by waffling on how much funding is even needed according to the introductory paragraphs of the Plan's Funding Chapter[133] where the document qualifies the entire funding discussion as being based on a "programmatic level" estimation of project costs.

The BDCP also relies on federal funding sources – sources that require future action by Congress to authorize the ongoing expenditure of funds or new authorizations to provide funding for BDCP activities over 50 years. However, the BDCP financing scheme conveniently ignores the federal Antideficiency Act which prohibits, among other things, (i) the creation of obligations in excess of amounts already appropriated, and (ii) the commitment of the federal government to pay funds not yet appropriated. Relying on funding sources that exceed current federal authorizations or require the future appropriation of funds, does not constitute an available or reliable funding source as required in HCP and NCCP permits.

Like other local agencies dependent on property assessments to fund its core functions, reclamation districts would incur an untenable loss of assessment revenues from the proposed conversion of 158,000 acres in the Plan Area from private to public ownership. The Association concerned the massive conversion of land proposed by BDPC may seriously impede the RD's ability to fund their O&M responsibilities. Local government agencies in the Plan Area need a reliable mechanism and funding source to replace lost local government revenues (taxes, assessments), including RDs, resulting from conversion of lands to habitat, water supply infrastructure and other actions associated with implementation of BDCP.

Put more plainly, the BDCP must incorporate permit terms and conditions in the Plan, Implementing Agreement, and EIR/EIS to make the RDs fiscally whole. Without such binding assurances, the remaining landowners within the Delta districts would be left with a

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[130] 16 U.S.C. §§ 1539(a)(2)(A), (B).
[131] U.S. Department of the Interior, *Habitat Conservation Planning And Incidental Take Permit Processing Handbook* (November 4, 1996) Fish and Wildlife Service
[132] *Southwest Center for Biological Diversity v. Bartel* (S.D. Cal. 2006) 470 F.Supp. 2d 1118, 1155, citing *National Wildlife Federation v. Babbitt* (E.D. Cal. 2000) 128 F.Supp. 2d 1274, 1294-1295, and *Sierra Club v. Babbitt* (S.D. Ala. 1998) 15 F.Supp. 1274, 1280-1282.
[133] BDCP EIR/EIS Chapter 8

proportionally higher share of the RD's fixed and administrative/ overhead costs.[134] DWR and USBR have a duty under CEQA and NEPA to identify these significant fiscal impacts. Another uncertainty of reliable BDCP funding being available for mitigation implementation, reimbursement of in-lieu assessments or compensation to third parties for damages caused by BDCP is even more suspect and elusive according to Section 14.3 of the BDCP Implementing Agreement which explicitly absolves BDCP Permittees from providing any additional financial compensation beyond the level specified in the Plan.

A well-accepted method to generate annual management funding over long time horizons, an endowment is an interest-bearing account, funded up front or in increments, in an amount sufficient to generate enough yearly income to fund annual project management. Because only the interest is available for use and the principal is not withdrawn, an endowment is non-wasting, and provides a perpetual source of funding.

In contrast, "Payments in Lieu of Taxes" are payments to local governments that help offset losses in property taxes due to non-taxable State government lands within the agency's boundaries. While endowments are lasting, enduring financial arrangements, in-lieu payments would be subject to the whim of the annual budgets.

The Association's members also have concerns about the availability of funding to implement mitigation measures for the hundreds of individual actions called for in *Avoidance and Minimization Measures* (Plan Appendix 3.C) and for the 750 impacts identified in the EIR/EIS. According to a California Department of Fish and Wildlife report on species conservation plans, one of the challenges the eleven conservation plans had in common was: "Costs for management and monitoring were universally underestimated and, as a result of scant resources, these programs have been largely under-funded and inadequately staffed." [135]

Currently, the Plan Chapter 8 on BDCP financing offers muddled recommendations when dealing with endowments and other long-term funding mechanisms rather than dependable assurances – as can be seen in these excerpts:

- Section 8.4.1 says, "Endowment funds may be advanced on a short-term basis," and "Management, restoration, or monitoring actions ***may be deferred until funding sources are available***" [emphasis added; this offers only uncertainty and ambiguity]

- Section 8.4.2 says, "The Authorized Entities will not be required to provide land, water, or monetary resources beyond their commitments in this Plan in the event of a shortfall in state or federal funding."

[134] The Agency incurs substantial costs related to engineering, management, consulting, and other necessaries related to administration of the Contract and protection of water rights and water quality.
[135] *See Comparative Review of Governance Structures for Ecosystem Management* (November 2006). *Available at* https://www.dfg.ca.gov/habcon/nccp/publications.html.

- Section 8.3.7.2 on the other hand indicates a commitment that BDCP will in fact have endowment funds, "It is assumed these costs will be paid from a nonwasting endowment that will be funded over the course of the permit term." "Under CM11 *Natural Communities Enhancement and Management*, an endowment will be established for post-permit term costs of CM3 through CM10."

Section 8.4.3 also mentions having a "target size" for endowment to fund management and monitoring after the permit term, but fails to indicate the amount of said target.

Finally, resolution of these funding issues is additionally critical to the Association because state agencies do not have a good track record of paying local property taxes and assessments, forcing local government agencies to sue for recovery.[136] For all these reasons, the Association asserts that a securitized endowment or similar financial assurance must be included as a condition of the HCP/NCCP permits and Implementing Agreement, in order to offset both the lost assessment revenue and the potential increased risk to public safety in the Plan Area.

RECOMMENDATION – To mitigate for the costs to RDs for redirected impacts to their levee maintenance, rehabilitation, improvement and general O&M costs (i.e., vegetation management and increased drainage pumping costs), the BDCP must clearly describe all sources of funding for all elements of the BDCP and require as a condition in the permits and Implementing Agreement the establishment of multiple endowments to fund all aspects over the 50-year life of the plan. Specifically, the BDCP must provide endowments to fund the following:

- The Mitigation Monitoring Plan, including the hundreds of individual actions called for in the *Avoidance and Minimization Measures* (Plan Appendix 3.C), and any actions necessary to avoid or remedy 1981 Contract violations;
- The Plan's Monitoring and Adaptive Management Program;
- Management contingency assumptions (Sec. 8.4.1);
- Payment of in-lieu property assessments (via an endowment or other stable and steady source of income) for lands associated with CM1 (Water Code § 85089(b)) and for habitat/conservations lands transferred from private to public property in the Plan Area pursuant to execution of MOU with RDs.
- Redirected improvement and O&M costs for flood control infrastructure impacted by implementation of BDCP conveyance and habitat restoration projects.

[136] See, e.g., North Delta Water Agency v. CA Department of Fish & Game (Case No. 06AS03923); Manteca Unified School Dist. v. Reclamation District 17 (fees for school assessments); Kruger, Harold "Levee District 1 tells Caltrans to pay up" Appeal-Democrat (November 2, 2013). Available at http://www.appeal-democrat.com/levee-district-tells-caltrans-to-pay-up/article_510ee3bf-be28-53ca-8b52-449318e471a5.html?mode=jqm

RECOMMENDATION –Chapter 8 of the Plan must provide more details on specific amounts to be deposited into each endowment fund at start-up and annually thereafter, including the total "target size" stating when endowments will be considered fully funded.

RECOMMENDATION – Request a mitigation measure be added requiring BDCP to pay for all additional O&M or other related district costs (i.e., higher electricity costs for drainage pumping, levee improvements to add freeboard due to sediment increases raising water surface elevations, wave fetch erosion damage from open water/tidal habitat restoration, etc.) incurred by reclamation districts as a result of implementation of any CM projects/actions such as more frequent inundation of flood bypasses and general alteration of SPFC or SRFCP facilities that creates redirected impacts to districts in and adjacent to the Yolo Bypass. These costs must be included and have own section and budget line item in the BDCP's Annual Work Plan and Budget, Sec. 6.3.1 and be funded for the full 50-year permit term.

RECOMMENDATION – The BDCP must incorporate the payment to local districts into the BDCP's Annual Work Plan and Budget and report annually on flood projection maintenance and improvement projects necessary to offset impact of BDCP actions in the Annual Progress Report. As part of their reporting duties the BDCP Implementation Office must collect and review the annual budgets for the Reclamation Districts of the Delta to determine: 1) the level of impact these additional costs would have on their limited funds; 2) whether these additional costs will result in levee improvement projects (substantial rehabilitation or reconstruction) being delayed; and 3) whether the delay in levee improvements would increase the risk of flooding and loss of life and property.

D. Evaporation of Flood Protection Bond Funding

Many of the slick brochures and even the economic analysis produced by BDCP claim the new conveyance facilities (CM1) are necessary to protect SWP and CVP water supplies from a catastrophic earthquake that will cause a multi-level levee failure that will shut down the delivery of water from the existing Delta export pumps.

This "Chicken Little" scare tactic is commonly used to convince otherwise reticent tax and ratepayers to open their wallets to fund extremely expensive projects. In fact, the fear of flood catastrophe after Hurricane Katrina in New Orleans was so great, the Central Valley benefited by having voters approve the Prop. 1 flood bond to invest in improving the State Plan of Flood Control facilities in order to protect lives and statewide infrastructure worth billions of dollars (water conveyance, electricity transmission line, highways, gas pipelines, railroads, etc).

Benjamin Franklin is attributed with saying, "An ounce of prevention is worth a pound of cure." In other words, it is better to try and keep a bad thing from happening than it is to fix the bad

thing once it has happened – and less costly too. This idiom is particularly true for improving levees in order to reduce the risk of flood damage.

BDCP's predecessor, CalFed, understood this, thus promoting and funding levee improvements as part of its core mission. BDCP abandons this principle by ignoring funding for levees.

The Good News Not Reported

Earthquakes have been cited as a substantial risk to Delta levees, with predictions of a major quake being likely sometime in the next few decades. However, there has never, in the 160-plus years of managed flood protection and control in the Delta, been a documented failure of a levee due to an earthquake. During the 1989 Loma Prieta earthquake (MW 6.9), some levees showed cracks, but none failed.

Contrary to the impression conveyed by the Plan and EIR/EIS, the Delta's levees are generally in good condition, and the risk of levee failure has been steadily decreasing during recent decades. These improvements are in large part due to the establishment of the Delta Levee Maintenance Program (commonly referred to as the Subventions Program) in 1973 and the Delta Levees Program in 1988.

For example, there are 1,100 miles of levees in the Delta, and during the last decade there were only two levee failures—Jones Tract (2004) and Fay Island (2006)—and the 100-acre Fay Island district was in the process of improving its levees at the time of the flood. It is important to note that these levees held despite this decade's having the seventh-highest water year on record for the combined Sacramento-San Joaquin River system (2005-06).

Modeling of the Delta levees' sensitivity to earthquakes has shown that quake-induced liquefaction can cause levee slumping. The history of Delta Levees, however, does not suggest a widespread series of catastrophic failures; and further modeling would need to be done that considers how liquefaction in a levee would actually function during a large-magnitude earthquake in the Delta. A complete assessment would also address the practical steps and Project Alternatives that can be implemented to achieve Project Purpose of improving water supply reliability from catastrophic failure by:

- Reinforcing the strength and stability of existing levees used for water conveyance;
- Immediately repairing observed damage in the immediate aftermath of an earthquake or flood event.

Funding Delta Levee Maintenance

In a coalition letter sent to CA Natural Resources Secretary John Laird on January 4, 2012, even some of the BDCP Proponents, such as Metropolitan Water District and Santa Clara Water District, acknowledged Delta levee maintenance and improvement "in the near term and in the decades to come" as important to water supply reliability. Included with the letter was a white paper entitled, "Urban Water Agencies Strategy for Delta Levees – List of Priority Levee Projects."

Yet, in the largest and most expensive water project purported to improve water supply reliability intentionally chose not to include Delta levee funding. This appears schizophrenic and a pound foolish, not to mention perplexing to say the least.

EIR/EIS Chapter 5, Appendix 5B, Section 5B.2.2 *Potential for Abrupt Disruptions of South of Delta Water Supplies* admits:

- "As noted above, sea-level rise could result in an increased risk of levee failure if the levees are not maintained and improved to accommodate the additional load. However, the State has programs and partners in the local agencies to support necessary levee improvements to minimize any increase in risk. It will be important to continue supporting these programs and to provide fund for the improvement of the levees in order to minimize the potential for inundation of the Delta islands. Without the programs and funding the potential effects on Delta water supplies could be very significant."

Section 5B.2.2.2 *Flood-Related Failures* additionally states that the State's Delta Levees Subventions and Delta Special Flood Control Projects Programs will:

- "become more important to ensure export water quality and water system conveyance through the Delta as hydrologic conditions associated with sea level rise and global climate change advance."

However, the EIR/EIS fails to analyze the impacts of the Delta Subventions Program less money over time, not more, due to potential future actions such as the current funding cost-share for Delta subventions sunsetting in 2018 and reverting to much smaller annual amounts or the 2016 expiration of Prop. 1E bond funding.

BDCP Proponents can certainly choose not to fund improvements to levees that are the conveyance thoroughfare for SWP and CVP export water supplies, but the EIR/EIS cannot abdicate the responsibility to analyze the funding capability of maintaining these infrastructure facilities over the next 50 years.

E. Failed to Analyze Ability of RDs to Shoulder Burden of Levees Repairs Assumed in the Plan and EIR/EIS

The reclamation and levee districts that operate and maintain most flood protection and control infrastructure in the Delta rely on the local assessment roll as their primary direct funding source, and it would be highly inequitable to leave them to protect new levee improvements or higher maintenance costs associated with the creation of habitat restoration or water supply infrastructure projects without outside funding.

The funding to implement such mitigation should not come from the adjacent communities, but should be part of the habitat restoration project cost. This approach is inherent in the Central Valley Flood Protection Board requirement to prepare hydraulic modeling of the effect of vegetation plantings in-stream and along levees. A permanent fund should also be established, again as part of the project cost, to maintain the levee improvements necessary for mitigation.

Current funding used by the State to fund the levee improvement program in the Delta comes primarily from Propositions 1E which is due to be exhausted in 2016 and there is no additional funding for levees provided in the 2014 water bond approved by the Legislature. The EIR/EIS fails to identify and analyze the financial ability of the State or local agencies to in fact fund these levee improvements necessary for the conveyance of water under BDCP, which is significant oversight since the BDCP fails to include any direct funding for the maintenance and improvements of conveyance levees prior to or during the plan's 50-year implementation period.

The annual budgets of Delta reclamation districts is typically very small, about $200,000 for non-urban districts, and the State does not have surplus general funds to contribute to these levee programs, so by the time Alt 4 is constructed in 2027 the funding for levee improvements is anticipated to be minimal for the decade prior.

The BDCP Project Objectives are not met by the Plan relying on the State or local agencies that do not have identified funding sources sufficient to fund necessary levee improvements to minimize increased risk of failure between now and when the BDCP is implemented or during the 50-year life of the BDCP, therefore the risk to the reliable SWP/CVP water supply will still exist under Alt 4 so the EIR/EIS should identify the environmental impacts associated with this residual risk.

In addition, the water operations as proposed in Alt 4 will not be able to provide the same water deliveries to SWP/CVP water contractors identified in the EIR/EIS if levee failures from subsidence, earthquake, or other non-flood event occur and cause the shut-down of pumping due

to salinity intrusion at South Delta pumps which are relied on 51-53% of the time in Alt. 4, so this should be identified as a significant adverse impact to water exporters.

RECOMMENDATION - Alt 4 should include a new Conservation Measure 23 to provide funding for specified levees in the Delta that are critical to the conveyance of water through the Delta to the South Delta pumps.

RECOMMENDATION – Conduct a cost-benefit analysis in accordance with State and federal guidelines on economic analysis, [footnote: both guidelines] including properly identifying the residual risk of levee failures that will reduce water export from the South Delta pumps due to lack of State or local agency levee improvement funding during the 50-year permits.

RECOMMENDATION – Request an Impact be added to the Water Supply Chapter disclosing that if no levee funding is provided in sufficient annual amounts from State or federal General Fund, State water bonds, and local assessments for the long-term maintenance and improvement of levees in the Plan Area that are critical to conveyance of water supplies to the South and North Delta SWP/CVP pumps, then this will result in a significant adverse impact on SWP/CVP water deliveries. If no mitigation for the impact is proposed in the EIR/EIS, then the document will need to identify this lack of levee funding as the Plan presumes as a potential "unavoidable" impact that could occur over the 50-year period of the BDCP permits.

F. Redirected Financial Burdens Inappropriate and Not Analyzed or Mitigated

The reclamation and levee districts that operate and maintain most flood protection and control infrastructure in the Delta rely on the local assessment roll as their primary direct funding source, and it would be highly inequitable to leave them to protect new levee improvements or higher maintenance costs associated with the creation of habitat restoration or water supply.

Avoid Erosion of Reduced Flood Risk Investments

The EIR/EIS failed to analyze whether BDCP's proposed alteration of SRFCP facilities will reduce or eliminate any portion of the public safety benefits achieved with $4 billion allocated from Prop 1E and 84, approved by local assessments, or allocated by Congress for numerous flood protection projects built in recent years. These public investments would be lost if additional improvements to recently completed local flood projects need additional funding for more improvements to offset increased flood risks created by BDCP projects modifying the SRFCP for water supply reliability.

The levee improvements that have been done since SB 34 (1988) through the Delta Levees Program and funding from Props. 1E and 84 has resulted in an increased level of protection. In fact, the amount of money spent on levees after 2006 (Props. E and 84) will be more than had

been spent in the previous 20 years *combined*, therefore the BDCP Plan should evaluate how CMs will alter the location and configuration and whether will result in redirected impacts that reduce the level of flood risk reduction achieved with recent levee improvement projects funding by Prop. 1E and 84.

Several details should be addressed in the EIR regarding non-Project levees. First, non-Project levees that are going to be deemed part of the through-Delta corridor should be identified. In addition, the document should describe the kind of rehabilitation would be accomplished on these levees to ensure that the failure risk is reduced due to the Project altering historical water surface levels. In addition, the EIR/EIS should address other levees in the Delta that provide benefit to the through-Delta portion of the dual conveyance facility; in particular, the levees that provide water quality benefits. The "domino effect" should be addressed in regard to levees that may, or may not, be maintained in the future. It is a documented fact that when levees fail and islands are not reclaimed, the neighboring islands experience extensive increases in maintenance due to seepage problems and increased wind/wave fetch forces.

These non-Project levees are maintained by local reclamation districts. The eastern alignment of the canal, in particular, will bifurcate a number of these reclamation districts. The BDCP document should address the future of reclamation districts once a canal is built through their boundaries. The canal will affect both the operation and maintenance of existing levees, possibly cause seepage problems that would hinder the structural stability of these levees, and would also create a separation of landowners that would change the ability to drain the lands.

There are issues with flood bypasses in the Delta as well. By way of example only, several proposals have been made to install habitat projects within the Yolo Bypass. Vegetation along or in a floodway influences hydraulics and reduces water velocity. Although the Bypass levees were designed with five or more feet of freeboard, water levels rose to within a foot of overtopping in 1986, meaning habitat restoration projects in the Bypass would invariably require levee improvements as mitigation, particularly given that the Bypass levees protect substantial lands on either side of the Bypass, including the City of West Sacramento and thousands of acres of productive farmland and natural and developed habitat.

In the San Joaquin side of the Delta, of particular concern is expansion of existing floodways in the Paradise Cut area. While the local residents and flood managers recognize and support the flood control benefits of modifying Paradise Cut to be inundated with flood flows, there are also important redirected impacts to existing flood control facilities that need to be taken into account when designing and permitting. For example, the modification to this area will cause flows to be diverted west and north along the non-Project levees of the south and central Delta instead of continuing in the San Joaquin River towards Stockton. The reinforcement and improvement of the non-Project levees impacted will have to be mitigated and the potential for injuring legal water users in the San Joaquin River due to changes in flow patterns, timing, and volumes. The

economic impacts, both beneficial and detrimental, of these changes in water flows needs to be analyzed thoroughly in a cost-benefit analysis conducted in accordance with State and federal guidelines for evaluating public water projects.

The funding to implement such mitigation should not come from the adjacent communities, but should be part of the habitat restoration project cost. This approach is inherent in the Central Valley Flood Protection Board's requirement to prepare hydraulic modeling of the effect of vegetation plantings in-stream and along levees. A permanent fund should also be established, again as part of the project cost, to maintain the levee improvements necessary for mitigation.

RECOMMENDATION – Analyze the environmental and economic impacts from BDCP actions that reduce effectiveness or level of flood protection achieved with prior flood improvement projects and public funding.

XIV. CONCLUSION

The substantial inadequacies of the BDCP documents fail to meet the legal requirements for HCP/NCCP permit approvals under state and federal endangered species laws or the environmental review disclosure and mitigation required for certification of the EIR/EIS to take place. Therefore, the Association requests the State to recirculate the Plan and EIR/EIS for public review and comment after revising in accordance with these and other comments.

To protect people and property in the Plan Area, the Association requests that BDCP Proponents revise the EIR/EIS to ensure the proposed conveyance and habitat conservation measures fully disclosure and mitigate impacts to the State Plan of Flood Control and to Delta levees. BDCP Conservation Measures must be designed, constructed, operated, and maintained to avoid imposing any new flood risks, re-directed flood and maintenance impacts to reclamation districts, or creating new regulatory obligations (including ESA), or affecting the local flood control agencies' ability to protect lives and property.

Local flood control districts in the Delta operate on tight operating budgets and strict public safety mandates. They cannot be responsible for increased capital, operation, and maintenance costs incurred as a result of BDCP implementation.

Respectfully,

Melinda Terry, Executive Director
CA Central Valley Flood Control Association