



California Central Valley Flood Control Association

August 3, 2010

Delta Stewardship Council
interimplan@deltacouncil.ca.gov.

Re: CCVFCA Comments on Draft Interim Plan

Dear Council Members:

These comments were prepared by the California Central Valley Flood Control Association (Association) on the Delta Stewardship Council's (Council's) Second Draft Interim Plan. The Association appreciates the time and effort that the Council has invested in preparing the Interim Plan and in particular the level of detail devoted to flood protection, control, management, and levee design issues. Since 1926, the Association has been actively involved in advancing and advocating for effective flood protection and management throughout the Central Valley, including the Delta, and its members will be greatly affected by the actions, projects and plans that the Council undertakes pursuant to the Interim Plan. We have organized our comments below by topic, and would be glad to provide greater detail on any particular issue if requested.

Historical Environmental Effect of Levees. The Interim Plan overstates levee construction's role in separating land and water, claiming that historically "water and land mixed freely across virtually the entire Delta." That statement is NOT TRUE! Most Delta levees were built upon natural banks high enough to keep out the daily tides. These natural banks were created by the deposition of sediment during high flow events, and prior to reclamation the daily tides did not inundate the local islands. As evidence, the Federal Government made detailed surveys of the Delta islands and identified them not as tidelands, but as Swamp and Overflowed Lands, and during the 1800s prepared maps demonstrating these findings.

Prior to levee construction, the Delta island interiors were generally inundated only during seasonal high stream flows that topped the banks. The Interim Plan should be revised accordingly as it is important to start with correct historical and baseline conditions as you cannot properly plan for the future if you do not accurately reflect the past.

The Delta Levee System Is Functional, Though It Can and Should Be Significantly Improved. The Draft Interim Plan selectively cites statistics suggesting the Delta levees are in

particularly poor condition. Contrary to the impression conveyed by the Interim Plan document, the 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).

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, the Interim Plan has so many references to seismicity that other, more common risks seem to be given inadequate consideration. 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. 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 account for the practical steps that can be implemented to repair observed earthquake damage in the immediate aftermath of a quake. Given these uncertainties, the short-term focus for levees (at least during the Interim plan period) must not be on earthquake-proofing, but on reducing the risk of failures due to the continuing threat of floods.

And of course there is an urgent need for ongoing Delta levee maintenance, rehabilitation, and improvement to insure eligibility for federal disaster relief. The Interim Plan can help with this by identifying opportunities and methods for increasing overall levels of funding for levee maintenance and improvements, improving reliability and timeliness of bond payments, and reducing regulatory roadblocks to levee maintenance and improvements.

The Integrated System of Flood Control. Reclamation in the Central Valley began around the 1860s with many miles of locally owned levees. Later, the Federal Government authorized projects that established a coordinated system of flood protection and control (e.g., Sacramento River Flood Control Project, San Joaquin Valley Projects), building and upgrading existing levees into what are now commonly called the “project levees.” Due to specific local flood protection needs, other “non-project” levees continue to be operated, maintained and repaired, and together with the project levees constitute an integrated system of flood protection and control throughout the Central Valley.

The California Legislature recognized the need to evaluate these levees as a system when it passed legislation in 2007 requiring the development of the Central Valley Flood Management Planning Program (CVFMPP), which is a valley-wide (including the Delta) determination of what the flood protection and control system currently is and management actions that should be

followed in the future. The Interim Delta Plan should not attempt to predetermine or direct the outcome of this effort, but rather recognize the CVFMPP process as the defining element of the future flood protection and control system throughout the Central Valley and Delta.

Flood Protection Is Paramount. 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, worse, simply an inconvenient system whose impacts must be addressed. These levees are what protect people’s lives, property and communities from being damaged or destroyed by floodwaters. They are absolutely critical to public health and safety; they are the primary feature that enables people to live, work and play in the Delta; they assure the reliability of the region for transportation, agriculture, business, and even water conveyance; and they provide this protection at all times, during both daily high tides and seasonal high-flow events.

The levees 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. In order to achieve the co-equal goals, the Interim Plan and Delta Plan must recognize flood protection as a priority that must be maintained to protect people, property, infrastructure, habitat, and conveyance.

No Reduction in Flood Control Capacity. The final Interim Plan (and ultimately, the Delta Plan itself) is intended to govern the process for recommending a suite of actions, projects and programs, some of which have a very high potential to interfere with the flood protection and control system. The Plan must therefore include a strong commitment to mitigating any and all such impacts. In general, higher water levels along a floodway will require higher levees, and changes in hydraulics will require increased armoring.

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 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.

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. 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 Council will also need to recognize that local Delta interests will have a continuing need for habitat mitigation for their own projects to benefit Delta communities, including levee

improvements by reclamation districts. With five county Habitat Conservation Plans and the Bay Delta Conservation Plan (BDCP) identifying habitat to be protected under their plans equaling hundreds of thousands of acres, it may create a future deficiency of suitable land for mitigation of future projects to benefit Delta communities. The Delta communities should not be left unable to pursue necessary projects because of lack of available, suitable mitigation habitat, as it will prevent the Delta from “evolving as a place.” The Council should think creatively about ways to set aside some habitat developed as part of large-scale projects, and use it expressly to mitigate for ongoing future local projects.

Vegetation and Levees. The Draft Interim Plan states: “Levee maintenance programs also eliminated riparian vegetation that provided shade for temperature control and protection.” While this may have some factual basis, it most often applies only to federal project levees. Many of the Delta non-project levees have, in fact, used substantial vegetation planting, mitigation, and management projects to enhance both flood protection and habitat values.

It is the Association’s position that when vegetation is selectively chosen and incorporated into levee design, it can improve structural stability and reduce surface erosion. Proper vegetation can also reduce levee maintenance costs while providing habitat value. Unfortunately, however, 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 the Interim Plan. First, the plan should emphasize that habitat-related 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. Second, the Council should actively engage in the discussions among various Federal, State and local interests to influence a new, sound policy (variance) for California levees. Additionally, the Council needs to recognize that Corp vegetation policy is only one of dozens of potential federal policy guidelines, such as encroachments and levee penetrations, affecting levees and flood facilities in the Delta and the rest of the Central Valley and develop an appropriate strategy for dealing with these issues.

Prioritize New Flood Protection and Control Improvements. The Interim Plan should expressly prioritize evaluating all potential actions, projects and programs for ways to incorporate integrated flood protection and control enhancements. Habitat, recreation, water supply, and transportation projects in particular provide significant opportunities for heightened flood protection and control. This approach makes simple economic sense, i.e., trying to achieve as many goals as possible through each proposed action. Moreover, new improvements—habitat or conveyance infrastructure or both—will require flood protection or themselves else risk being damaged by high-flow events.¹

For decades, levee improvement projects in the Delta have been required to include multi-benefits such as environmental improvements. Given the paramount need to protect public health and safety, the Council should ensure that every action, project or plan it approves or undertakes use the same multi-objective requirements that levee projects are required to achieve.

¹ Any improvements in the upper areas of the Delta will need to consider potential upstream impacts of new flood control infrastructure.

This would mean that all projects approved, including habitat restoration projects, incorporate some incremental improvement to the flood protection and control system, just as levee projects have been required to incorporate improvements to the environment in order to be considered for approval.

A related matter is that the suite of actions and plans ultimately approved under the Interim Plan will undoubtedly result in the movement and excavation of materials that could be invaluable in improving the levees. The plan should prioritize making appropriate sediment, rock and other materials available to local maintaining agencies without cost.

Streamlined and Increased Funding for Ongoing Levee Maintenance and Improvement.

As discussed in the Interim Plan, Water Code Section 85020 recognizes the need for any new governance structure to include funding for flood improvements. As such, the plan should strongly recommend increased funding for maintenance, operation, repair and rehabilitation of Delta levees, preferably under the existing Delta Subventions Program. However, the Council should investigate ways it can improve the timely delivery of funding reimbursements to local agencies so they can avoid a recent trend of having to float loans and interest payments for up to two years. An ability to streamline and improve the reimbursement with voter approved bond funds will maximize the use of local and state funds for levee improvement work.

Voters approved Propositions 84 and 1E in large measure to improve flood protection and control in the Delta, and those funds have not been made fully available. The Department of Finance's inability to efficiently and completely release these funds is actively thwarting the voters' will. This concern is urgent because, as currently administered, the Proposition 84 authorization could well terminate before all the funds are released. The most glaring example is with the Special Projects. The Department of Water Resources has approved approximately \$120 million for use in implementing special flood protection and control projects in the Delta, yet no such funds have been released for the past two years.

Because the promised funds are not being released in a timely manner, local districts are forced to use their limited annual maintenance budgets to pay interest on the short-term bank loans they took out to initiate projects. Since the money is paid out only as reimbursements, districts are required to spend the money before they are eligible to receive State funds—and since district budgets are limited, they almost always must take out loans to begin the work.

Late payments of bond funds to the local districts thus leave them unable to perform all planned levee maintenance work while jeopardizing their relationship with local banks and cause the districts to expend their future levee maintenance budget to cover the bank loan payments while waiting for reimbursement from the State.

This means that levee districts, which have very small annual budgets, will not have funds to implement routine maintenance of their levees for years to come as they had to use their maintenance budget to pay interest to the bank. Over the long term, this means the levees of these districts will *not* be able to keep up with their maintenance needs through no fault of their own. This seems like an easy fix the State should pursue as an immediate near-term fix in the Interim Plan.

Leverage Federal Financing. Non-project levees are an important component of the integrated Delta flood control system. These levees only become eligible for Federal emergency funds (PL 84-99) once they pass an initial inspection assuring they meet the Corps's engineering, maintenance and qualification criteria. Once upgraded to PL 84-99 and active within the program, flood damage to these levees is eligible for repair using federal funding. The potential for upgrading non-project levees to meet these criteria should be an important long-term consideration in the Delta Plan when considering actions, projects and programs.

Emergency Preparedness. 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.

The Interim and Delta Plan should identify clear chain of command, who pays for what, coordination of response and funding, and cooperative effort to pursue federal reimbursements for recovery. Consideration of any new conveyance and habitat restoration projects in the Delta Plan should ensure any impacts to flood conveyance or levee integrity are fully mitigated—and upgraded (armored, raised, widened) whenever possible to make them resistant to flood and earthquake events.

Best Available Science / Transparency. The Draft Interim Plan details the need to rely on the best available science in making decisions. In determining what science is the “best available” in the context of flood protection and control, it will be imperative utilize the practical expertise of the engineering professionals and firms that have practiced in the Delta for decades and have a solid understanding of both the controlling technical principles as well as the site-specific contexts in which flood protection and control operations actually occur.

The plan should also state that all modeling and assumptions will be made available to the public as early in the process as possible. Transparency will enable the public to follow and review the technical basis for the Council's decisions, and the Council will benefit from enabling third-parties to provide substantive critiques and peer review.

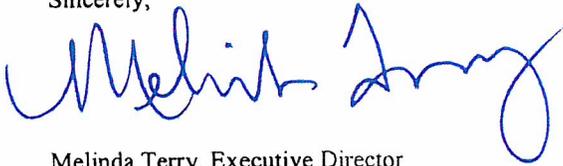
Specific Recommendations for Interim and Delta Plan:

- **Accurate historical description of environmental effects of levees**
- **Recognize the success of Delta Levees Program in reducing frequency of Delta levee failures in last couple of decades**
- **Identifying opportunities and methods for increasing overall levels of funding for levee maintenance and improvements, improving reliability and timeliness of bond payments, and reducing regulatory roadblocks to levee maintenance and improvements**
- **Do not pre-empt flood management recommendations of the CVFMPP to be released in 2012**

- **Recognize flood protection as priority for all decisions, projects, and policies adopted and/or approved by the Council**
- **Require establishment of permanent funding mechanisms (including long-term maintenance) for mitigation of any changes in water elevations and changes in water hydraulics for projects that are detrimental to effective flood control system by proponents of any actions, projects and programs in the Delta**
- **Maintain adequate amount of habitat in the Delta for mitigation of future improvement projects that benefit Delta communities**
- **Actively engage in discussions among various Federal, State, and local interests regarding the modification of the Corps' levee vegetation policy**
- **Require habitat, recreation, water supply, and transportation projects in the Delta to include flood protection and control enhancements as part of their multi-objective**
- **Make sediment, rock, and other materials created by water conveyance and habitat restoration projects available to local levee maintaining agencies at no cost**
- **Process for improving timely delivery of bond money for reimbursement payments for projects implemented under the Delta Levees Program**
- **Leverage federal funding for upgrading non-project levees to PL 84-99 standards**
- **Develop protocols for responding to emergency flood events and clean-up and recovery after event**
- **Use extensive in-Delta engineering expertise to develop and peer review "best available science"**
- **Make all modeling and assumptions/criteria available to the public prior to finalizing or approving projects and programs in the Delta**

We request that these comments be given strong consideration when revising the Draft Interim Plan. If you have any questions regarding these comments, please feel free to contact me at (916) 446-0197.

Sincerely,



Melinda Terry, Executive Director

cc: T. Michael Hardesty, Board President
Scott Shapiro, Association Counsel
Gilbert Cosio, Association Engineer
Association Membership