CALIFORNIA CENTRAL VALLEY
FLOOD CONTROL
ASSOCIATION

April 17, 2020

Department of Water Resources,
Delta Conveyance Scoping Comments
P.O. Box 942836
Sacramento, CA 94236
Attn: Renee Rodriguez

SUBJECT: CCVFCA Scoping Comments on Delta Conveyance Project Notice of Preparation

The CA Central Valley Flood Control Agency (CCVFCA/Association) submits these scoping comments on the Notice of Preparation for the Delta Conveyance Plan (DCP) to identify potential flood risks associated with the design, operation, and construction of the DCP that should be analyzed in the EIR. In existence since 1926, the Association was established to promote the common interests of its membership in maintaining effective flood control systems in the Central Valley and Delta for the protection of life, property, and the environment. Association members include reclamation and levee districts, plus cities and counties with flood management responsibilities along the Sacramento and San Joaquin Federal Flood Control Projects and non-project levee systems within the Sacramento-San Joaquin Delta. The Association's specific interest is assuring that the construction, mitigation, and operation activities proposed in the DCP will not in any way impede, diminish, or impair the flood flow capacity, functionality of the State and Delta's levee systems, or the performance of flood safety duties by Reclamation Districts.

DELTA FLOOD PROTECTION BACKGROUND

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. [1] 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.

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

More than 40 percent of Northern California's runoff flows 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 precipitation. 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.

SRFCP PURPOSE AND HISTORY

Authorized by Congress in 1917, the Sacramento River Flood Control Project (SRFCP) and San Joaquin River Flood Control Project (SJRFCP) is a system of "Project levees" and flood bypasses designed and built by the U.S. Army Corps of Engineers (USACE/Corps) for three purposes:

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

By 1949, over 90 percent of the SRFCP and SJRFCP project works had been completed and in operation. Today, 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. This leaves about 700 miles of additional Delta levees 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. All of these project and non-project levees and flood bypasses serve to protect $70 billion in infrastructure in the Central Valley, including the State's water conveyance infrastructure in the Delta.

RISKS TO FLOOD CONTROL PURPOSE, FUNCTION, EFFECTIVENESS

In 1953, the SPFC works were transferred to the Central Valley Flood Protection Board (CVFPB) 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.[2] 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. Collectively, the facilities, lands, programs, conditions, and mode of O&M for the State-federal flood protection system in the Central Valley and Delta are referred to as the State Plan

[2] 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.

of Flood Control (SPFC).[3] Annual inspections of the SPFC levee system are conducted twice annually by DWR.[4] 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.[5] Levees in the Delta provide this protection at all times, during two daily high tides and seasonal high-flow events.

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 a permit issued by the CVFPB.[6] 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.*

The EIR should include a Flood Chapter that identifies the design, operation, and construction components that propose altering the SPFC or could potentially increase flood risks in the Delta. Following are elements that should be analyzed in a Flood Chapter:

A. Substantial Alteration of the Location, Configuration, and Purpose of SPFC

Specific examples of anticipated DCP construction activities that may impact existing flood protection facilities and system design flow capacities:

- Construct 2 intakes on Sacramento River eastside levee within 4-mile stretch;
- Install multiple in-water cofferdams in Sacramento River and several Delta channels for intakes and barge loading facilities;
- Construct cutoff walls down middle of levees to prevent seepage;
- Increase sediment loading and removal at intake locations;
- At each of the intakes, install multiple large gravity collector box conduits penetrating through the levee prism to convey flow to the sedimentation system on the landside;
- Construct multiple barge landings on levees;
- Modify approximately several miles of levees, on either a temporary or permanent basis;
- Blocking, re-aligning, re-routing, and removal of state highways, county and private roads with levees underneath pavement;

[3] 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

[4] 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.

[5] DWR *A Framework for Department of Water Resources Integrated Flood Management Investments in the Delta and Suisun Marsh* (September 24, 2013)

[6] 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

- Removal and local storage/disposal of millions of cubic yards of tunnel muck;
- Removal and local storage/disposal of millions of cubic yards of dredged material; and
- Installation of power lines over existing levees.

Potential impacts related to DCP construction activities that specifically require more analysis, disclosure, and mitigation in the EIR:

- Damage to levee integrity and stability from tunnel muck 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 dewatering;
- Deflection and obstruction of flood flows in selected Delta channels due to cofferdam construction for three intakes and five barges, 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 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;
- Cumulative effects on the flood control system, particularly SPFC facilities and operations.
- Regulatory constraints on implementing mitigation (e.g., USACE's no vegetation on project levees policy, obtaining anticipated dredging permits);
- Impacts reducing the current level of flood protection achieved with recent Prop. 13, 1E, and 84 investments;
- FEMA building requirements and NFIP flood insurance eligibility;
- Evacuation plans for communities (residents, businesses, schools, tourists, etc) in the Plan Area.
- Financial impacts to RDs in the Plan Area (e.g., reduced assessment revenues during the 10-year construction, increased maintenance costs to deal with seepage/erosion damage, increased drainage pumping costs);
- Increase in FEMA flood insurance rates and building restrictions, or PL 84-99 eligibility problems as a result alteration of the Delta levee system.

B. Long-Term Disruption of Levee Inspections, Maintenance, And Improvements

Local Reclamation Districts (RDs) are responsible for daily inspection of levee conditions for issues such as cracks, slippage, encroachments, seepage, burrowing animals, etc., as well as for performing routine maintenance activities on and around the levees in order to meet USACE and FEMA standards required to be eligible for federal levee repair funding. DWR conducts levee inspections twice a year and the USACE conducts more extensive Periodic Inspections every 5

years of the SPFC project levees. There is significant concern that DCP construction will interfere with the ability of numerous RDs to conduct levee inspections, maintenance, improvements or floodfighting.

C. Interference with Local Drainage

Local RDs are also responsible for operation and maintenance of drainage facilities on Delta islands in order to keep the land reclaimed for farming. The existing drainage facilities on Delta islands 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 or obstruction caused by DCP construction potentially renders the whole system inoperable, resulting in localized inundation.

DCP construction 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. Dewatering would also result in significant volumes of discharge into local irrigation/drainage ditches, but there is no extra capacity in these local facilities and therefore cannot be used during DCP construction. Increased water volumes from 24/7 dewatering discharged into the rivers and waterways would increase surface water elevations locally, and erosion and scour on adjacent levees may create adverse impact depending on the velocities and volumes of water being discharged.

CCVFCA recommends the EIR:

- Examine existing conditions in terms of interconnected drainage systems and whether DCP 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 construction dewatering;
- Identify how long dewatering and subsequent discharges will occur at each location;
- Analyze changes in water quality that would occur at each discharge location.

D. Increased Land 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 manage it over time. However, DCP construction could potentially increase land subsidence and sinkholes as a result of the widespread and intensive 2/47 dewatering and pile driving that will occur during the 14-year construction period.

With dewatering pumps placed every 50 to 75 feet around the entire perimeter of all the DCP facilities under construction, each pumping between 240 to 10,500 gallons per minute, groundwater will be lowered several feet on a large radius around each pump. This amount of

intensive, long-term dewatering has the potential to destabilize the soils, including levees, 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 tunnel. Damage to the existing interconnected drainage and irrigation systems due to sinking land will increase localized inundation of crops, fruit packing sheds, and homes. These individual and cumulative impacts need to be analyzed, disclosed, and mitigated. The EIR should also include a map depicting the levees and drainage facilities (ditches/pipes/canals/pumping stations) that may be exposed to subsidence or liquefaction due to dewatering activities.

E. Risks to Levee Stability

Concerns over levee stability and their performance during a seismic event is one of the purposes identified in the Notice of Preparation. However, DCP construction activities will involve intensive and sustained ground-shaking from hundreds of construction trucks on levee roads 24/7, numerous dewatering pumps, and millions of pile-driving strikes occurring in multiple construction sites that will adversely affect the stability of nearby levees. The sustained intensive localized vibration for such a long duration could cause stress fractures and possibly levee failures.

The EIR should include technical analyses, data, and scientific research evaluating how the excessive pile driving during DCP construction will affect the integrity and stability of nearby levees and effects on the overall performance of the SPFC in a high water flood event. The cumulative effects of pile driving and dewatering on reducing levee stability and increasing land subsidence/sink holes in the DCP construction area should be acknowledged and mitigated in the EIR. A map should be included in the EIR depicting the locations of all pile driving for DCP 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 land subsidence.

F. Increased Traffic will Damage Levees

Most of the roads and highways in the Delta are in fact pavement on top of a levee. The thousands of construction trucks on Delta roads 24/7 for 10-14 years of DCP construction will create daily wear and tear on levees that will need to be repaired on an annual basis. The potential for impacts to the levees includes 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 EIR should disclose the number of construction vehicles that will be on the road each day with the number of daily trips each vehicle will make and identify locations where there will be road blockage, re-routing or access issues that will interfere with the ability of RDs to inspect, operate, maintain, repair and floodfight levees.

G. Emergency Response and Flood Recovery Conflicts

Risk from levee failures can be reduced, but not eliminated, so being prepared for a flood emergency is the best defense. This requires having an effective strategy for preventing failures

with ongoing levee improvements and maintenance, protocols for responding with emergency flood fighting activities, a plan for evacuation, and local recovery after the flood event.

Based on the flood history in the Delta, the DCP is guaranteed to experience at least one major flood event during the 14-year construction period. In addition to modification of the SPFC levee system, DCP construction will require extensive alteration of the existing Delta road configuration, including re-routing and blocking local roads and highway segments. These changes in transportation routes will impede floodfighting response and the safe evacuation of local residents.

The inability to quickly floodfight and repair a damaged levee will result in loss of life and property, and could have the domino effect of causing neighboring levee failures if DCP construction activities/equipment prevent access to the levee break or impede movement of key floodfighting personnel and supplies. These impacts and emergency response measures need to be disclosed and mitigated in the EIR.

CONCLUSION

The DCP proposes the largest alteration of the SRFCP since it was originally constructed and will therefore have significant impacts to the Delta's flood protection system that need to be analyzed and mitigated in an EIR. The Association requests the EIR include a Flood Chapter that discloses impacts to levees and performance of flood protection duties described above and to conduct hydraulic modeling that analyzes impacts to flood flow capacity, levee scouring, and water surface elevations.

Sincerely,

Melinda Terry,
Executive Director