



## Central Valley Flood Protection Plan

### Meeting Summary **Draft Final**

### Delta Regional Conditions Work Group Meeting #3

**Time:** September 10, 2009, 9:00 am – 3:00 pm

**Location:** San Joaquin Farm Bureau

3290 North Ad Art Road, Stockton, CA 95215

Presentations and Materials Available Online at [www.water.ca.gov/cvfm](http://www.water.ca.gov/cvfm)

#### MEETING ATTENDANCE:

##### Members Present:

Name	Organization
Sameer Sharideh	San Joaquin County; San Joaquin County Flood Control and WC District; San Joaquin Area Flood Control Agency
Scott Deal	California Department of Fish and Game
Kara DiFrancesco	Natural Heritage Institute
Linda Fiack	Delta Protection Commission
Marci Coglianesse	Bay-Delta Pubic Advisory Committee, Delta Levees and Habitat Sub-committee
Michelle Orr	Philip Williams & Associates
Jerry Robinson	San Joaquin Farm Bureau Federation
Brook Schlenker	US Army Corps of Engineers
Dave Shpak	City of West Sacramento
Chuck Spinks	American Society of Civil Engineers
Jan Vick	Mayor, City of Rio Vista
Jane Wagner-Tyack	Restore the Delta; League of Women Voters of San Joaquin County
William Darsie	KSN Inc.
Leo Winternitz	The Nature Conservancy

##### Team Present:

Bryan Brock	DWR (Work Group Lead)
Bill Eisenstein	Kearns and West (K&W) (Facilitation Team)
Gary Hester	DWR, Program Manager - Central Valley Flood Planning Program
Ibrahim Khadam	MWH (Technical Team)
Christal Love	Center for Collaborative Policy (CCP) (Facilitation Team)
Merritt Rice	DWR, Central Valley Flood Protection Office (CVFPO – Project Lead)
Robert Yeadon	DWR, Regional Coordinator
Josh Yang	MWH (Technical Team)

##### Observers:

None

#### WORK GROUP ACTION ITEMS

	ITEM	OWNER	TIMEFRAME
1.	Homework	Workgroup	9/17/09

2.	Provide information regarding changes to meeting 4 and how to access future meeting information on the CVFMP website calendar.	Ibrahim Khadam (MWH)	Prior to next meeting
3.	Add Updates from other Work Groups as an agenda item on future meeting agendas.	Bryan Brock (DWR)	On-going
4.	Check List of Future Projects to determine if the North Bay Aqueduct is included.	Bob Yeadon (DWR)	Prior to next meeting
5.	Create a protocol to help Work Group Members determine whether or not to print documents out in advance of the meeting.	Ibrahim Khadam	Prior to next meeting
6.	Review matrix model provided by Linda Fiack.	Ibrahim Khadam	Prior to next meeting
7.			
8.	Check with George Basey regarding history of the Delta.	Merritt Rice	Prior to next meeting

**GROUP RECAP** (meeting highlights for use by Work Group partners in their communications)

The Delta Regional Conditions Work Group (Workgroup) of the CVFMP Program continued its work on September 10, 2009 with the following actions:

- Continued review of existing and unique conditions/resources in the area should be considered in the development of the first Central Valley Flood Protection Plan (CVFPP) scheduled to be completed by January 1, 2012 for consideration for adoption by the Central Valley Flood Protection Board (Board) by July 2012. These include biological, physical, infrastructure, socioeconomic (including agriculture), cultural, and institutional and other considerations.
- Review and confirm the changes made to the Regional Conditions Summary Report (RCSR) Outline
- Develop a list of potential impacts to flood management within the Delta Region based on external drivers defined in Workgroup meeting #2.
- Develop a list of problems within the Delta Region that are associated with the problem categories identified in Chapter 3 of the RCSR. These problems will be used to develop “problem statements” that will assist in the process of identifying goals and objectives for the region.

The Work Group’s purpose is the development of content for the RCSR, a key component for developing the 2012 CVFPP. The RCSR will identify resources, conditions within the Central Valley, flood management and related problems and opportunities, and goals and objectives for use in preparing the CVFPP. The Delta Work Group is one of five regional Work Groups in the Central Valley.

## MEETING OBJECTIVES

- Respond to issues raised in Meeting #2 (including coordination among the regions)
- Refine drivers and challenges & consider implications for the plan
- Complete first round discussion on the regional description
- Confirm categories of problems and key problem elements
- Begin generating content for problem statements and consider sample opportunity statements
- Preview work for Meeting 4 and discuss options for reducing full group meeting time.

## MEETING SUMMARY

### SUMMARY:

#### Welcome and Greetings

Bill Eisenstein (K&W) opened the meeting, discussed facility logistics, meeting materials and asked meeting participants to introduce themselves. He then reviewed the meeting agenda, provided a walkthrough of the day's materials/handouts.

#### Opening Remarks

Gary Hester (DWR) delivered opening remarks, and noted due to the rapid pace of the meeting schedule, DWR/technical staff is beginning to get backlogged on content production. As a result, staff decided to eliminate meeting #4 and collapse the work schedule into the remaining six meetings. An additional meeting may be eliminated later in the process. Ibrahim Khadam (MWH) will provide the Work Group with information regarding future meeting dates (**see Action Item #2**). Mr. Hester provided an update on the following issues:

- The Board has approved an agenda item to allow DWR to sign a cost sharing agreement with the U.S. Army Corp of Engineers.
- DWR is in the process of forming an Agricultural Stewardship subcommittee to capture the Agricultural perspective. Existing Work Group Members from all regions will be solicited to join this Work Group. The time commitment will likely be 2-3 meetings and the size of the subcommittee is expected to be between 20-30 people.
- DWR is working on getting Work Group Members access to electronic files of the reference documents.
- DWR is continuing discussions on how to coordinate the Central Valley Flood Protection Plan with BDCP.

#### Discussion:

- Work group members expressed interest that the issue of BDCP participation / coordination resolved before the next meeting.

#### Review of Previous Meeting #2 Action Items

After a general review the following topic generated additional comment.

Bob Yeadon (DWR) will review the list of potential future projects to determine if the North Bay Aqueduct had been included (**see Action Item #4**).

#### Review and Confirm Chapter 1 & 2 outline

Mr. Khadam reviewed changes to the Chapter 1 and 2 outline of the RCSR. Some of these changes are based on comments by other workgroups; all changes apply to sections 2.3 and 2.4 of the RCSR. Mr. Khadam noted although the order of some sections in the final RCSR may change, all content reflected in the outline will be included. Changes/additions to these sections included an new Emergency Planning, Response, and Recovery Section.

Discussion:

- A request was made to create a protocol participants could use to inform them whether or not to print meeting handouts in advance of the meeting.
- A suggestion was made to develop a matrix to allow for tracking the documents sent out for review. Linda Fiack suggested reviewing the matrix the Planning Commission uses as a model (**see Action Items #5 and 6**).
- One person noted that some of the section numbers in the Chapter 2 Outline did not match up with the Chapter two text headers.

**Review Outline Next Steps on Draft History General Description**

Mr. Khadam reported that some Work Groups were asking for more details regarding the history of the Delta. Merritt Rice (DWR) stated that DWR currently has a history document but that perhaps it is too limited to chronological listing events and actions. He acknowledged the importance of having a historic component included in the RCSR (**see Action Item #8**).

**Chapter 2, Priority Challenges and Drivers (Worksheet 7)**

Mr. Eisenstein introduced Worksheet 7, and explained in this exercise, the Workgroup will look at the 2050 planning horizon and discuss how particular “drivers of change” may affect the Delta region. The list of drivers was based on input from all of the workgroups. Meeting participants were instructed to provide additional drivers as needed. Mr. Khadam then explained drivers of change are things outside of a flood manager’s control. Meeting participants discussed the driver categories and made the following modifications:

- Add commercial and habitat enhancements under the type and location of development category
- Add Environmental resource values to the environmental regulations category
- Specify that subsidence includes both groundwater overdraft and Delta island subsidence
- Add sediment capture under the water quality category
- Add a Seismic driver

The following table includes the results of the exercise grouped by individual drivers of change.

Driver	Rate or Trend of Change	How Driver Impacts Flood Management
Change in the number of people living in the floodplain	Trend is increasing, thereby putting people at risk	<ul style="list-style-type: none"> <li>• Building levees around Delta Islands will induce growth</li> <li>• Decrease development in rural areas because it is harder to build</li> </ul>
Type and location of Development <ul style="list-style-type: none"> <li>• Residential</li> <li>• Industrial</li> <li>• Commercial</li> </ul>	Short-term: decrease building Long-term: increase building (especially in floodplain)  Trend will raise again in the secondary zone	<ul style="list-style-type: none"> <li>• Big issues in secondary zone</li> <li>• Raises peak flow</li> <li>• Increases levee development</li> <li>• Upstream development equals less likely intentional or accidental break</li> <li>• Levees affect runoff – includes setbacks and interior</li> <li>• Change in hydraulics (direction of flow, height of peak flow)</li> <li>• Discrepancies in levee height and quality</li> <li>• Water side recreational development affects flood</li> </ul>

		<ul style="list-style-type: none"> <li>flights</li> <li>Change in land use / change in funding</li> <li>Upstream development lead to higher flows downstream</li> <li>Encroachment on levee maintenance, upgrades and rehabilitation</li> <li>Creates new system condition that is hard to recognize</li> <li>Size of scale of current repairs to have downstream effects</li> <li>Need to quantify / understand cumulative impacts</li> <li>Displacement of capacity for flood flow</li> <li>"development" does not equal buildings</li> </ul>
<ul style="list-style-type: none"> <li>Agricultural</li> <li>Habitat Enhancements</li> </ul>	<p>Will increase where it compliments flood planning Agriculture will go to habitat</p> <p>More vineyards / high value crops</p>	<ul style="list-style-type: none"> <li>Agriculture is not a big driver for flood management in the Delta</li> <li>Water conveyance drives rural levee protection</li> <li>Should consider habitat friendly Agriculture</li> <li>Consider set back levees and use the land in between</li> <li>Opportunity for Delta program to pick up a new objective</li> <li>Processing facilities and marketing / tourism are fixed assets</li> <li>Agriculture needs infrastructure</li> <li>Environmental restoration can add capacity and decrease peak flows</li> </ul>
<p>Climate Change</p> <ul style="list-style-type: none"> <li>Sea level rise</li> </ul>	<p>Climate change will / could increase cost and make the system harder to manage</p>	<ul style="list-style-type: none"> <li>Levee height</li> <li>As you flood more areas you decrease tidal energy</li> <li>Greater hydrostatic head and need for redesign</li> <li>Existing levees will have to go higher / wider (if nothing is done will have overtopping at 3 feet)</li> <li>Salt water comes in; increasing need for flushing and alternative conveyance</li> <li>New levees increase the flood risk</li> <li>West Delta and Suisun Marsh would be impacted substantially</li> <li>Increase flooding throughout Delta</li> <li>Need to factor in tidal influence and backwater effects</li> <li>More sediment deposition / lower velocity</li> <li>More levees will be wet for longer</li> <li>Erosion on the back side of the levee</li> <li>Habitat lines will change – marsh lines will move or disappear</li> <li>Some places are no longer feasible to have levees due to cost</li> </ul>
<ul style="list-style-type: none"> <li>Runoff patterns</li> </ul>	<p>Climate change will / could increase cost and make the system harder to manage</p>	<ul style="list-style-type: none"> <li>When runoff comes down it will have an impact</li> <li>Could change the definition of the 200 year flood event</li> <li>Will mean reoperation of reservoirs / new reservoirs</li> <li>Increase flow amount, although total annual runoff may not increase</li> </ul>

		<ul style="list-style-type: none"> <li>• More or less rainfall? The volume may not change but the time and intensity of rainfall could change</li> <li>• Need for alternative storage to deal with larger volume of water (i.e. floodplains)</li> <li>• More local floods, need for better emergency services</li> <li>• Increase velocity leads to increase sediment transport and changes to where sediments is deposited</li> <li>• Could change how flood control system is designed</li> <li>• Will effect how the system is coordinated</li> <li>• Will require a bigger cross section of levees</li> <li>• Could cause increase in levee set back</li> </ul>
<ul style="list-style-type: none"> <li>• Temperature</li> </ul>	Climate change will / could increase cost and make the system harder to manage	<ul style="list-style-type: none"> <li>• Habitat related, certain species respond to increases in temperature, flood management system may have to control temperature</li> <li>• Changes in water temperature will effect certain plant species that will effect water system capacity</li> <li>• Need to consider what crops are growing; could increase the roughage coefficient</li> <li>• May have conflict between species loss and flood management</li> <li>• Warm water can carry more sediment and salt</li> <li>• Warm water can support toxic or invasive biota; could increase red tide</li> </ul>
<ul style="list-style-type: none"> <li>• Wind Velocity</li> </ul>	Climate change will / could increase cost and make the system harder to manage	<ul style="list-style-type: none"> <li>• Storm intensity would increase</li> <li>• Wind pattern intensity could require changes to structures</li> </ul>
Environmental Regulations	Harder to comply in the short-term; easier in the long-term	<ul style="list-style-type: none"> <li>• Increase conflicts with flood management</li> <li>• Complementary habitat activities</li> <li>• Regulations will only increase in cost and time required (except in emergency situations, the risk of which would also increase)</li> <li>• Need to look for ways to provide flood management that meets environmental regulations</li> <li>• Flood program creates opportunities to solve regulations at a programmatic level</li> </ul>
Water Supply <ul style="list-style-type: none"> <li>• Reservoir operations</li> <li>• Development</li> <li>• Subsidence <ul style="list-style-type: none"> <li>- Groundwater Overdraft</li> <li>- Delta Island subsidence</li> </ul> </li> <li>• Conveyance</li> </ul>	Trend towards rules favoring water supply?	<ul style="list-style-type: none"> <li>• Cannot control weather</li> <li>• Reservoir operation rules based on past climate patterns</li> <li>• Water storage v. flood storage</li> <li>• Increasing pressure to reduce flood storage</li> <li>• Greater potential for uncontrolled releases</li> <li>• Timing and coordination of releases increasingly important</li> <li>• Development of new supply may crease new dams with fold storage capacity</li> <li>• Different trends possible in conveyance</li> <li>• Conveyance infrastructure is a major flood management issue</li> <li>• Conveyance infrastructure can be an impediment to overland flow</li> </ul>

		<ul style="list-style-type: none"> <li>• Facilities may require higher levels of protection – may lead to bigger levees</li> <li>• Consider whether subsidence should be moved to geo-physical driver category</li> <li>• Flow regulations could affect flood management (water contracts EWA, etc)</li> </ul>
Water Quality	Trend is to reduce dredging Ag productivity decreased Funding decreased Most contaminants arrive from upstream & stormwater – trend is raising	<ul style="list-style-type: none"> <li>• Sediment Load causes a lower capacity in whole Delta</li> <li>• Reduced water quality</li> <li>• Potential for material reuse decreased</li> <li>• Invasive species (especially vegetation) may affect hydrology</li> <li>• Presence of contaminants may constrain restoration</li> </ul>
Available public funding for needed improvement	Federal / State: short (0-10 yrs) and mid term (10-20 yrs) = increase in funds Local short-term: rural areas would see reduced funding; urban areas would see increased funding Long-term is unknown for all levels of government	<ul style="list-style-type: none"> <li>• Public funding is critical, without it the alternative would be either: private funding, increased flooding, and/or increase in user fees (users would include people who use water/water way or are behind levees)</li> <li>• Feast or famine cycles, maintenance is deferred</li> <li>• Discrepancy between value of land use and importance of levee for flood system</li> <li>• Sources of funding do not match beneficiaries</li> <li>• Maintenance cost depends on levee configuration</li> <li>• Base level of funding is inconsistent and incoherent</li> </ul>

### Problems and Opportunities, categories and subcategories (worksheet 8)

Mr. Khadam provided a slide show on problems and opportunities. This slide show is available online at the web address listed above.

After the presentation and initial discussion, Mr. Eisenstein instructed the Workgroup to look at the categories in Worksheet 8 and add in any problems that do not fit under the current categories. Workgroup members noted that recreation, transportation and socioeconomic should be included. The Group agreed to capture them as part of the land use category but suggested they be called out separately.

The results of the discussion on Worksheet 8 are listed below by problem category:

Category	Within Flood Protection Facilities	Outside Flood Protection Facilities	Problem
Flood System Performance			<ul style="list-style-type: none"> <li>• There is not a Delta flood system in an agreed upon uniform standard</li> <li>• San Joaquin River system is not passing the design flows</li> <li>• System is designed based on historic flood flows, not current</li> <li>• There is no universal agreement that all of Delta should have flood protection</li> <li>• Do not have good enough coordination between upstream</li> </ul>

			<ul style="list-style-type: none"> <li>and down stream system improvements</li> <li>We lack a total system design that achieves integration</li> <li>We lack a means for managing redirected impacts</li> <li>Delta is very hard to model because of system complexity</li> </ul>
System Maintenance and Repairs			<ul style="list-style-type: none"> <li>We lack a reliable ongoing, consistent source of funding</li> <li>Current tax laws (especially prop 218) make it hard to raise funds for protection of health and safety</li> <li>Flood control is not grouped with police and fire</li> <li>Environmental regulation may conflict between state agencies or between state and federal agencies</li> <li>DWR has conflicting mandates with regard to Delta levees prioritization for water supply and flood control</li> <li>Public perception in Delta is that DWR prioritizes water conveyance</li> <li>Non-project levees provide some statewide benefits but are not funded or prioritized commensurately</li> <li>Project and non-project levees are administrated differently, which leads to inconsistency in system performance</li> <li>(10,000+) vs. non-urban distinction and urbanizing. Leaves out rural communities and small towns</li> <li>Benefit – cost analysis does not consider statewide or nationwide benefits</li> </ul>
Reservoir Operation			<ul style="list-style-type: none"> <li>Reservoir operations are unwilling to modify operations</li> <li>Flood control rule curves are outdated</li> <li>Flood releases among reservoirs are not coordinated well enough</li> <li>Reservoir operation are not keeping up with forecasting capabilities – which is hurting both water supply and flood control</li> <li>Reservoir operation can not make real time adjustments based on monitoring</li> </ul>
Habitat Quality, Quantity, and Connectivity			<ul style="list-style-type: none"> <li>A larger levee footprint will cause a loss of habitat (both terrestrial and aquatic)</li> <li>U.S. Corp of Engineer vegetation management Emergency Technical Letter will result in extensive loss of riparian habitat</li> <li>Existing Delta Habitat is degraded and disconnected</li> <li>Levees disconnect rivers from natural floodplains and natural habitat</li> <li>Deep subsidence does not provide for history Delta habitat</li> <li>Mandatory levee maintenance is inconsistent with terrestrial and aquatic habitat values</li> <li>Dredging impacts streams and aquatic habitat</li> <li>Operation of water supply system effects ecosystem in the Delta</li> <li>The manner the flood control system is operated does not take into account habitat values</li> <li>A water conveyance system designed to move water quickly disrupts benthic conditions and riparian vegetation</li> <li>Not allowing access because of structural features harms ability to spawn</li> </ul>

			<ul style="list-style-type: none"> <li>• Timing of flood related releases does not coincide with natural conditions (cold water release)</li> </ul>
Policy and Institutional			<ul style="list-style-type: none"> <li>• Environmental regulations sometimes conflict and are difficult / costly to comply with</li> <li>• Environmental regulations can result in fragmented mitigation</li> <li>• Delta flood control system is fragmented and decentralized</li> <li>• Diversity of jurisdictions in the Delta interferes with flood management</li> <li>• Fragmentation of authority complicates flood flights</li> <li>• Primary zone designation may lead people to believe there is no development or flood protection</li> </ul>
Water Supply (Shared Facilities, Groundwater Recharge)			<ul style="list-style-type: none"> <li>• Limited flood protection space in reservoirs</li> <li>• There is competition between water supply storage and flood protection</li> <li>• Levee failures jeopardize water supply and increase salinity</li> <li>• A system designed for water supply negatively impacts flood management</li> <li>• Not enough off-stream storage for peak flood flows upstream of Delta</li> <li>• Insufficient freshwater flows can degrade water quality</li> <li>• Water supply infrastructure in Delta drives flood control analysis and water quality management</li> </ul>
Level of Protection			<ul style="list-style-type: none"> <li>• Level of protection is not consistent with land value</li> <li>• State level of protection transfers risk to other communities downstream / upstream</li> <li>• Federal funding / flood insurance for a flood event is dependant upon meeting specific changing levee design criteria</li> <li>• There is no clear direction on which levees to improve or what standard to use</li> <li>• Efforts to achieve levee protection are driven by liability rather than by function</li> <li>• Level of protection standards are not driven by function</li> </ul>
Land Use			<ul style="list-style-type: none"> <li>• Existing and potential development are disproportionately influenced by presence or absence of flood protection</li> <li>• Land use planning is not correlated with flood management. There is no state requirement for local zoning to respect flood management</li> <li>• There is no cost/benefit analysis for land value</li> <li>• The cost of flood protection is not correlated with land value</li> </ul> <p>(Transportation)</p> <ul style="list-style-type: none"> <li>• All transportation facilities (land and water based) are vulnerable to loss</li> </ul> <p>(Recreation)</p> <ul style="list-style-type: none"> <li>• Levees limit access to rivers</li> <li>• Boats cause wave erosion of levees</li> <li>• Ships damage levees and could cause floods</li> <li>• Levees interfere with riverfront development</li> <li>• Flooding damages marina facilities</li> <li>• Inconsistent levee ownership interferes with public</li> </ul>

			access to water
Emergency Response			<ul style="list-style-type: none"> <li>• There is a lack of emergency response plans in the Delta which could lead to isolated communities</li> <li>• Local communities do not have adequate flood mitigation plans</li> <li>• Lack of coordination among State, Federal and Local emergency response teams and agencies</li> <li>• Levee construction / design standards do not take into account emergency management</li> <li>• Lack of redundant / cross levees to provide safety features</li> <li>• Emergency responders are isolated from areas of responsibility</li> <li>• No consistence in response to Delta areas</li> </ul>
Post-Flood Recovery			<ul style="list-style-type: none"> <li>• No Delta flooding policy for Delta Islands</li> </ul>
Water Quality			<ul style="list-style-type: none"> <li>• Abandoned vessels and illegal dumping impacts flood management</li> <li>• Public access to levees creates opportunity for illegal dumping</li> <li>• Fresh water quality supply is vulnerable to West Delta levee failure</li> <li>• Flooding of developed or otherwise used lands will result in water contamination</li> <li>• One size fits all levee design criteria does not take into account land use and channel use</li> <li>• Every year stormwater runoff flushes contaminates into water way and causes harm to fish</li> </ul>

### Homework Overview, Next Steps, Action Items, and Meeting Recap

An overview of specific action items discussed throughout the day was presented. The group then reviewed the agenda and was asked whether or not the meeting goals were reached. Work Group members did not raise any concerns about reaching the meeting goals. The group was thanked for attending and for providing input.

### Adjourn