A COMPREHENSIVE DELTA AND UPSTREAM WATER MANAGEMENT PLAN THAT PROTECTS THE DELTA WHILE MEETING OTHER NEEDS

Proposed by the South and Central Delta Water Agencies, and
the Delta Water Users Association in Consultation with other Parties

INTRODUCTION

The purpose of this document is to present a Delta and Central Valley water management plan that addresses all needs. Other plans that have been proposed would only meet some needs at the expense of other needs, and have largely ignored the interrelation of Delta and upstream hydrology. The other plans also provide no increase in the inadequate developed water supply. This Plan builds on the In-Delta Group's "Water Plan for the 21st Century" presented to Delta Vision last month by Tom Zuckerman. This Plan incorporates a refined version of Dr. Russ Brown's Proposal to Reconnect the San Joaquin River to the Estuary or "Delta Corridors" proposal. Modifications will be submitted as soon as possible. They have been discussed with Dr. Brown and are needed to control salinity and maintain net unidirectional flow in affected channels. It also incorporates the South Delta Water Agency's (SDWA) June 2004 South Delta Flood Conveyance Plan, and SDWA's proposed upstream measures to reduce the brief winter flood flows that greatly exceed background flows. It then also includes proposed levee and channel improvements, and channel flow controls to achieve needed flood protections and timely recovery from levee failures. Funds have been committed and the initial modeling and analyses of the Plan will be diligently pursued.

THIS PLAN ADDRESSSES THE FOLLOWING NEEDS

- The Plan must convey flood flows without levee breaks that can't be repaired in a timely manner, without major damage to important infrastructure, and without serious disruption of water exports.
- The Plan must minimize the risk of damaging delays in restoration of fresh water in Delta channels if seismic levee failures could cause a surge of Bay water inflow to the Delta.

- The Plan must protect the Delta; including its agricultural production of food, its fishery, its navigation, its recreation, its transportation corridors, etc. It must do this in both wet and dry years.
- The Plan can maximize the water supply that is available for export in excess of water needed to protect the Delta. This will require less export in dry years, such as 2007, but substantially more can be exported in wet years. This flexibility in dry versus wet year exports will require continuing increases in regional groundwater and surface storage. These are measures such as are underway in southern California and the Los Vaqueros expansion, Kern County water bank, etc.
- The Plan must be able to accommodate a three foot rise in sea level. (If the rise is eventually greater than this more drastic measures will be needed in many coastal and Bay areas and those measures may interrelate with Delta measures).
- The Plan must include the restoration, improvement, and maintenance of flood flow capacity, particularly in shallow channels and bypasses.
- The Plan must include upstream measures to reduce brief peak flood flows, particularly in the San Joaquin watershed.
- Fresh water inflow to the Delta has been greatly reduced from the San Joaquin, Mokelumne, and Calaveras watersheds. Sacramento water must continue to commingle with water throughout the Delta channels in order to avoid a damaging rise in salinity of Delta waters.
- The basic pattern of channels and land uses in the Delta must be retained, but an increase in shallow wetlands can be achieved where they would be most effective and in balance with other land uses.
- The Plan must not create stagnant channel reaches in which salinity, dissolved oxygen, and exotic aquatic plants cannot be controlled.
- The Plan must improve the protection of fishery.
- The Plan must minimize the potential for damaging unintended consequences. It must avoid irreversible measures with uncertain benefits.

PRINCIPLES AND FACTUAL UNDERSTANDINGS THAT UNDERLIE THIS PLAN

- Contrary to speculation by other parties, the salinity of water in the Delta pool (the collective water resident in Delta channels) has increased most of the time since 1900 and is typically higher than it has been in centuries.
- There is a contention by some parties that the Delta is doomed to become a salt water bay, so it might as well be abandoned now in favor of a peripheral canal which would assure that result. They ignore the fact that the canal would do nothing to increase the overall state water supply. If billions of dollars are not spent to build, operate, and maintain a peripheral canal, a lesser amount of money can be used to successfully protect the Delta and the multiple needs discussed above. It is not true that the fresh water Delta can not be preserved.
- During each decade the state's population is increasing by about six million people. The water needed for consumptive use to house, provide food and create jobs for those people must be made available, but the state's current Water Plan makes almost no provision for increasing the developed water supply to accommodate increased consumptive use of water while protecting the Delta. This Plan addresses that need.
- Any acceptable plan should comply with the Delta Protection Statutes, area of origin and water rights law, and at a minimum be as protective as currently existing salinity and dissolved oxygen standards which should furthermore be consistently and continuously met.

SPECIFIC MEASURES THAT ARE INCLUDED IN THIS PLAN

The specific measures that collectively constitute this Plan can be roughly divided among:

- measures for protection from winter storm and snow melt floods
- measures to protect from surges of Bay water inflow potentially caused by seismic events
- measures to provide adequate fresh water inflow to the Delta

- measures to maintain non-damaging salinity throughout Delta channels
- measures to better protect fishery.

Each of these objectives requires somewhat different approaches in different portions of the Delta which have different land and channel bottom elevations, different sources and qualities of channel water inflow, different fishery problems, etc. Measures that are reasonably common among regions of the Delta are addressed first. Measures that are more specific to various regions are then discussed by regions. These measures are interrelated and are all necessary for a complete plan.

1) General provisions for flood management

- Improve all levees to comply with the Corps' PL 84-99 level of protection. This will provide protection for the basic pattern of land and water.
- Improve all urban levees to provide 100-year level of protection and then move toward 200-year level of protection.
- Improve the level of seismic protection for urban levees, and evacuation routes, and also in the western Delta west of Frank's Tract. The western Delta has the greatest seismic risk.
- Restore and maintain channel flood flow capacity wherever it has been impaired by vegetation and/or sedimentation (possible channels for such restoration may include areas below the city of Grayson on the San Joaquin River, the Chowchilla and other bypasses, between Vernalis and Mossdale on the San Joaquin, and Old River and Middle River in the South Delta, the overflow and bypass channels above Sacramento, etc.).
- Increase the capacity of bypasses including Paradise Cut in the South Delta.
- Avoid structures such as the peripheral canal which could constrict major flood channels and/or block the passage of flood flows when levee breaks occur.
- Reinforce levees that are particularly vulnerable to seismic failure and/or the consequences of failure are extreme.

- Due to seepage impacts on adjoining islands and levees, deep flooding of Delta islands should be precluded.
- The Delta corridor proposal can incorporate primary levees along Old River and portions of the San Joaquin River to provide for the rapid recovery of exports after a seismic event as postulated by the PPIC Report. These primary levees would serve the purpose intended in the armored Middle River proposal for emergency action suggested by the Metropolitan Water District of Southern California

2) Western Delta provisions

- Provide channel closures or flow controls that can reduce the inflow of Bay water into channels that are then difficult to flush. These measures will also reduce Bay water entrainment in the north to south flow induced by exports. These flow inhibitors might, for example, be in False River and Three Mile Slough.
- Initiate studies of surge control structures similar to the Dutch sea level surge closures. The feasibility and optimum location of these surge controllers can be determined by engineering analyses.

3) South Delta provisions for flood management

- Flood conveyance provisions from Vernalis to the central Delta are proposed per the South Delta Water Agency's (SDWA) June 20, 2004 South Delta Flood Conveyance Plan. (This will be available on a website separately submitted.)
- Upstream measures are also as proposed by SDWA to reduce the brief peak winter flood flows that far exceed background flows, as happened in 1997. These measures include early reservoir releases under defined winter flood situations. They also include restoration of historic overflow onto now-existing dedicated wildlife refuges and grasslands near Los Banos. This can provide substantial transient valley floor storage of peak flood flow waters. A Corps Reconnaissance

study showed that somewhere between 100,000 and 200,000 acre feet of transient storage could be provided.

It should be noted that most South Delta lands have mineral soils and are above mean sea level. They cannot therefore be substantially converted to permanent wetlands by natural flooding.

SPECIFIC MEASURES REQUIRED TO MAINTAIN SALINITY AND WATER AVAILABILTIY IN THE SOUTH DELTA

There is now no required minimum flow of water into the Delta at Vernalis. The flow is sometimes insufficient to meet local diversion needs. Furthermore, any summer flow that arrives at Vernalis contains a very substantial load of salt that drains into the San Joaquin River from the CVP's westside service area. Unless dredged, the elevation of South Delta channels is such that when water levels are reduced by export pumping and inflow is low, some channels have at times been sucked dry. There is no plan by which the existing South Delta salinity standards will be consistently met. This year, a salinity standard was violated nearly all summer at one compliance location. This Plan proposes that there be an enforceable minimum flow and maximum salinity at Vernalis to correct this problem. A minimum flow of approximately 1000 to 1200 cfs at Vernalis is required. Such flow can be provided by releasing water from the Delta Mendota Canal through existing "wasteways" to the river, i.e. "recirculation". This has been demonstrated in several tests, including one in August 2004 and another now in progress. Those tests used the Newman Wasteway. A test in 1977 used the Westley Wasteway. An inflow of low salinity water can also be provided in part by using fish friendly, low lift pumps to augment the capture of water by South Delta tidal barriers.

FISHERY BENEFITS OF THE PLAN

The Plan will have several benefits for fishery and wetlands.

- Exports would be restricted in any given year to the amount that is excess to Delta needs. This will substantially reduce the proportion of Delta inflow that is exported in dry and below normal years. This reduces impacts on fishery.
- The mixing zone or X2 would be maintained farther west than it currently is. This will help increase nutrients in the system and create additional habitat.
- The Plan will provide adequate water depth and water circulation in all important channels at all times. Fish will, therefore, not be subjected to inadequate dissolved oxygen, or inadequate depth with high temperatures, or blankets of water hyacinth.
- The Plan suggests areas that would be suitable for conversion to shallow water wetlands.
- The refined version of Russ Brown's proposal will connect all resident and migrant fish in the San Joaquin River system and San Joaquin Delta channels to the western Delta. Those fish will not be subject to loss at export fish screens, or channel reaches with inadequate dissolved oxygen. There will be continuous net daily downstream flow all the way to the Bay, thereby getting salts in the San Joaquin River out to the Bay. We still need a valley drain, but this proposal will in large part reduce the amount of salt imported into the valley and help get the salts in the San Joaquin River out to the Bay and ocean.

COMPARISON WITH OTHER PLANS

- Plans that propose that the water in Delta channels be made saltier and variable with time are promoting a salinity regime that has never before existed. Its alleged benefits are highly speculative. We now have about one half million acres of agricultural production of food on Delta lands. Assertions by the PPIC that

agriculture could survive their proposed rise in salinity are seriously flawed. The salinity would be higher than salinity standards throughout the Central Valley.

- A peripheral canal would keep much of the remaining fresh water inflow out of the Delta. This would unavoidably and substantially increase salinity in Delta channels. Delta farmers would be put out of business.
- Delta farmers are the primary maintainers of Delta levees. If those farmers are put out of business, levees will progressively fail. As they fail the tidal inflow of salty Bay water will increase. The pattern of lands and channels will be lost, and the Delta will convert to a salty open water bay.
- Proposals for dual conveyance (part through the Delta and part by a peripheral conveyance) are not sustainable. Exporters will export as much as possible through the peripheral conveyance. This will increase the salinity of Delta waters, particularly in years of low Sacramento flow. The exporters will then not want to export the salty Delta water and will therefore increase the conveyance capacity of the peripheral conveyance to convey all exports. Farmers will be salted out of business, and the Delta will become a salty open bay. A salty open bay then could not be restored to a fresh water Delta.
- Plans to use an isolated conveyance channel through the Delta instead of around the Delta would create most of the same problems, except that it would be easier to abandon, provided it were abandoned before the restoration of the fresh water Delta became impossible.
- The Plan in this document is the only plan that

1) complies with Delta Protection Statutes, area of origin and water rights laws, and existing salinity and dissolved oxygen standards;

2) protects the Delta while increasing the multiyear availability of water for export;

3) isolates San Joaquin fishery from impacts caused by exporting Delta water;

4) retains the basic pattern of Delta lands and waters;

5) maintains the agricultural production of food in the Delta;

6) avoids creation of stagnant channel reaches with loss of salinity and dissolved oxygen control; and

7) continues to commingle Sacramento fresh water with Delta channel water throughout the Delta, except in far Western Delta channels.

CONCLUSION

No plan can completely satisfy competing interests. However, we believe that this Plan would provide significant improvement for each of the listed needs in a compatible manner. We believe it is superior to other plans in terms of water supply, flood conveyance, protection of fishery, protection of the fresh water Delta, and compliance with long-established laws, with water rights, and with salinity and dissolved oxygen standards. The Plan will continue to be improved and detailed, just as all competing plans should receive further analyses before any selection is made. We will soon submit this Plan with greater specificity of detail and with maps and early modeling analyses.