"Flexible Delta" proposal
(Straw scenario 2 and 3)

Staff suggestions in italics

Land form and levees:

* Protect the existing island configuration but confine water conveyance to an armored channel along South Fork of Mokelumne and Middle River **(FD.1)**.

* Add buffers to protect activities in the primary zone wherever negative impacts are occurring.

* Continually maintain and improve agricultural levees to meet the drivers of change other than seismic.

* Develop and implement a levee maintenance program for Suisun Marsh to support water quality, existing wetland values and functions and ecosystem restoration activities.

* Protect Ryer Island and Highway 84 Corridor with seismically strong levees. **(FD.2)**

* Maintain Sacramento and Stockton ship channel levees to protect channel use. **(FD.3)**

* Protect Sherman, Twitchell, Brannan, Bradford, Webb, Jersey, and Bethel Islands with seismically strong levees. Explore whether they are best protected by a continuous ring levee (a) or individual levees (b) by conducting cost analysis and reviewing other considerations, such as boat access. **(FD.4)**

* Protect Sherman Island against levee failure to avoid destabilizing rest of Delta **(FD.5)**

* Rebuild Highways 12, 160 and 220 on top of seismically safe, 100-year flood levees **(FD.6)**

* Protect legacy towns with seismically-safe, 100-year flood ring levees **(FD.7)**

* Provide seismically-safe flood protection for Sacramento and West Sacramento **(FD.8)**

* Provide seismically-safe flood protection for Stockton/Lathrop area **(FD.9)**

* Protect critical infrastructure, including the water conveyance channel, and a South Delta infrastructure corridor (including Highway 4, the Mokelumne Aqueduct, and the BNSF Railroad) with seismically safe levees **(FD.10)**

* Improve other levees to future 100-year flood protection as needs appear.

* Enhance habitat along Old River and in west Delta with setback and vegetated levees **(FD.11)**

Conveyance and water quality:

* Partially segregate the water conveyance system and aquatic habitat with operable gates connecting Old and Middle Rivers **(FD.12)**, and siphon the Victoria Canal under Old River to deliver water to the Clifton Court Forebay **(FD.13)**.

* Recirculate some export water from California Aqueduct to San Joaquin River

* Link Delta export rates to hydrologic and water quality conditions.

* Convert Webb Tract and Bacon Island to in-Delta water storage islands. Water could be stored for eventual use or for carbon production to benefit ecosystem **(FD.14)**

? Determine how to direct freshwater from crescent ?

* Ensure that water delivered through Middle River conveyance channel to the pumps is of higher quality than today.

* Explore reduction of overall export quantities due to reduced conveyance capacity.

* Extend Contra Costa intakes to Middle River to avoid Old River **(FD.15)**.

Ecosystem:

* Restore floodplain along the main stem of the Sacramento River (upstream of city of Sacramento) for the benefit of splittail and migrating salmonids, and to increase nutrient and organic carbon flows to Delta. Improve salmon spawning gravels in upstream reaches and tributaries of Sacramento River **(FD.16)**

* Explore infiltration of floodwaters upstream to reduce Delta flood risk and replenish Central Valley groundwater aquifers **(FD.17)**

* Manage Yolo Bypass for benefit of splittail and salmonids, and to increase nutrient and organic carbon flows to Delta. Ensure that the flood conveyance capacity of the Yolo Bypass is maintained, and that water quality needs of the North Bay aqueduct are met **(FD.18)**

* Enhance channel configuration and hydraulics of Elk Slough, Sutter Slough, and Steamboat Slough to provide alternative route for migratory fish that avoids Georgiana Slough and the Delta cross-channel **(FD.19)**

* Improve hydraulic residence time and tidal exchange between Cache Slough and the Delta to contribute organic carbon, nutrients, phytoplankton and zooplankton to the Delta, for the benefit of Delta smelt among others. Create a hydrologic and terrestrial connection between Cache Slough and Suisun Marsh **(FD.20)**

* Restore Mokelumne and Cosumnes River corridors. Enter into formal flood flow agreements with private landowners in the Stone Lakes area and other potential flood bypass areas. Explore opportunities to increase flood flow areas. **(FD.21)**

* Convert managed wetlands into tidal wetlands as habitat restoration in Suisun Marsh (currently a brackish water habitat). Restore tidal action in each region of the Marsh, within the following ranges:
    500 to 2,250 acres in Region 1
    460 to 2,070 acres in Region 2
    180 to 810 acres in Region 3
    860 to 3,870 in Region 4 **(FD.22)**

* Restore seasonal floodplain on the lower San Joaquin River, including flood bypass on Paradise Cut **(FD.23)**

* Restore tidal marsh on Decker Island and Dutch Slough **(FD.24)**

* Maintain existing managed wetlands and create new tidal wetland habitats.

* Restore various tidal wetlands ecological functions (to benefit clapper rails, delta smelt, and native plants, among others) in Suisun Marsh.

* Manage Bouldin Island and Holland Tract for habitat **(FD.25)**

* Create setback levees at opportune sites in west Delta and the lower Sacramento River to allow tidal marsh restoration **(FD.26)**.

* Convert the west end of Sherman Island to managed tidal marsh **(FD.27)**.

* Permit salinity variation permitted inland to Webb Tract

* Purchase terrestrial habitat and wetlands easements from willing landowners.

* Create new flood bypasses south of Vernalis for San Joaquin River and in Stone Lakes region. Study water system and ecosystem management implications **(FD.28)**.

** Assist in the achievement of habitat acquisition, creation, and enhancement goals of Central Valley Joint Venture for seasonal wetlands, semi-permanent wetlands, riparian forests, and waterfowl-friendly agriculture*

** Assist in the acquisition of water needed for seasonal and semi-permanent wetland habitat acquisition, creation, and enhancement under the Central Valley Joint Venture plan*

Land use:

* Assist transition of West Delta islands away from agriculture to recreation, wildlife habitat or other land uses as salinity fluctuation impacts farming.

* Concentrate tourism and recreation investments along Highways 160 and 12, in north Delta waterways, and in legacy towns. Permit legacy towns to grow at historic growth rates driven by internal, locally-driven needs to expand local economies **(FD.29)**.

* Permit boating throughout Delta.

* Enhance fishing, hunting and birdwatching by ecosystem changes described above.

Infrastructure:

* All highways, the Mokelumne Aqueduct, and the BNSF Railroad protected in infrastructure corridors placed atop seismically safe levees.

* Protect Stockton ship channel and water conveyance channel with seismically safe levees **(FD.30)**

* Key electricity transmission lines and natural gas fields mostly protected on Sherman and Brannan-Island Islands; repair other reaches on an as-needed basis

* Improve and maintain Suisun levees to protect significant infrastructure such as natural gas production, Southern Pacific Railroad tracks, petroleum pipelines, built structures and wildlife habitat

Emergency management

** Identify areas to store materials for emergency response (including temporary channel barriers) as soon as possible*