Steamboat Slough and Sacramento River barrier studies of the past: Compiled by N. Suard, Esq. of Snug Harbor to help others understand the pros and cons of barrier locations based on DWR past studies and more current conditions in the North Delta:

Lately DWR graphics show the Sacramento River as flowing along the Ship Channel— that means the flows past Clarksburg, Walnut Grove, Isleton are diverted and the Yolo Bypass flows are used to “flush” out the salts. The barrier at False River is intended to keep fresh water INSIDE the Central Delta to be available for the export pumps. Now that DWR has indicated they may put a barrier at the south end of Steamboat Slough, depending on how much Sacramento River water is diverted into the Yolo Bypass, all North Delta waterways could end up being shallow and marshy. See next map:
Maybe they plan to use all that water at Liberty Island Reservoir to flush out the salt water? Given the increases in flow on the Yolo Bypass, even during drought times, one might wonder if DWR was planning all along to propose blocking off lower Steamboat Slough?
Above map comes from a page of the 1957 Bulletin that discussed various possible locations for barriers in the Delta. The purpose of the barriers in 1957 were to direct more Sacramento River flow into the Central Delta and the export pumps. Note that in 1957 both Steamboat Slough and the Sacramento River around Georgiana Slough were proposed for barriers. Miner’s Slough appears blocked off too.
In 1960 the words are “control structure” and the focus is the use of Georgiana Slough with a boat lock at the confluence with the Mokelunne River.
The Comprehensive Delta Water Project would salvage water otherwise needed for salinity control and provide water for the Delta. In addition, the project would provide flood and seepage control, transportation, and recreation benefits for most of the Delta. New master levees would encompass five principal groups of islands and Sherman Island. Works for water supply and drainage in the Delta would include those of the Typical Alternative Delta Water Project, with some modifications, plus other works to serve the newly formed island-groups. Additional small craft facilities would also be constructed.

Flood waters of the San Joaquin River would be divided between the main channel and an improved chain of distributary channels to the west, the two branches coming together in the western Delta. Improved channels of the Lower San Joaquin River Tributaries Flood Control Project would be incorporated.

The master levee along Piper Slough east of Bethel Island would be constructed on old levees on Franks Tract to minimize interference with existing developments on the Bethel Island levee.

The additional interior channels created by the project in northeastern Contra Costa County would contain good quality water, and would serve as a fresh water distribution system for the adjacent islands. Intensive small craft traffic in the vicinity of Bethel Island would necessitate the construction of four small craft portage facilities in adjacent channels and one small craft lock at Sand Mound Slough.
1945 plan requires a large intake around Hood or Greens Landing
1960 plan to divert ALL Sacramento River flow to the export pumps. This was renamed “Emergency Freshwater Pathway” by MWD around 2003.
Notice the location of yellow dots which are flow barriers-graphics from MWD presentation.

Through-Delta plan looks the same as the CALFED 2000 ROD and the same as the 2012 SDCP "central conveyance" plan.

If the levees are set back and waterways dredged, it allows more fresh Sacramento River water to flow into the Mokelumne River and to the export pumps.
DRMS Phase 2 Water Export Conveyance Element: Armored Pathway

Preliminary Design/Construction Costs
- 15,000 cfs Facility ~ $ 5 ½ - 9 Billion
- 10,000 cfs Facility ~ $ 4 ½ - 8 Billion
- 5,000 cfs Facility ~ $ 3 ½ - 6 Billion

(Costs depend upon level of Middle River levee improvements)

Potential Benefits Include:
- Significant Reduction in Risk of Water Export Interruption
- Significant Benefits to Fish by Isolating Old River from Middle River/Setback Levees
- Operational Flexibility Using Barrier Gates

Limitations Include:
- Operational Limitations to be Determined
- Lower Reliability compared to ICF for Water Export due to Physical and Environmental Risks
- Costs do not include mitigation for sea level rise or continued island subsidence