

**From:** Joseph\_Rizzi [[mailto:Joseph\\_Rizzi@sbcglobal.net](mailto:Joseph_Rizzi@sbcglobal.net)]  
**Sent:** Wednesday, April 05, 2017 2:45 PM  
**To:** Littlejohn, Anne@Waterboards  
**Subject:** Add Folsom water to Lower San Joaquin River Delta  
**Importance:** High

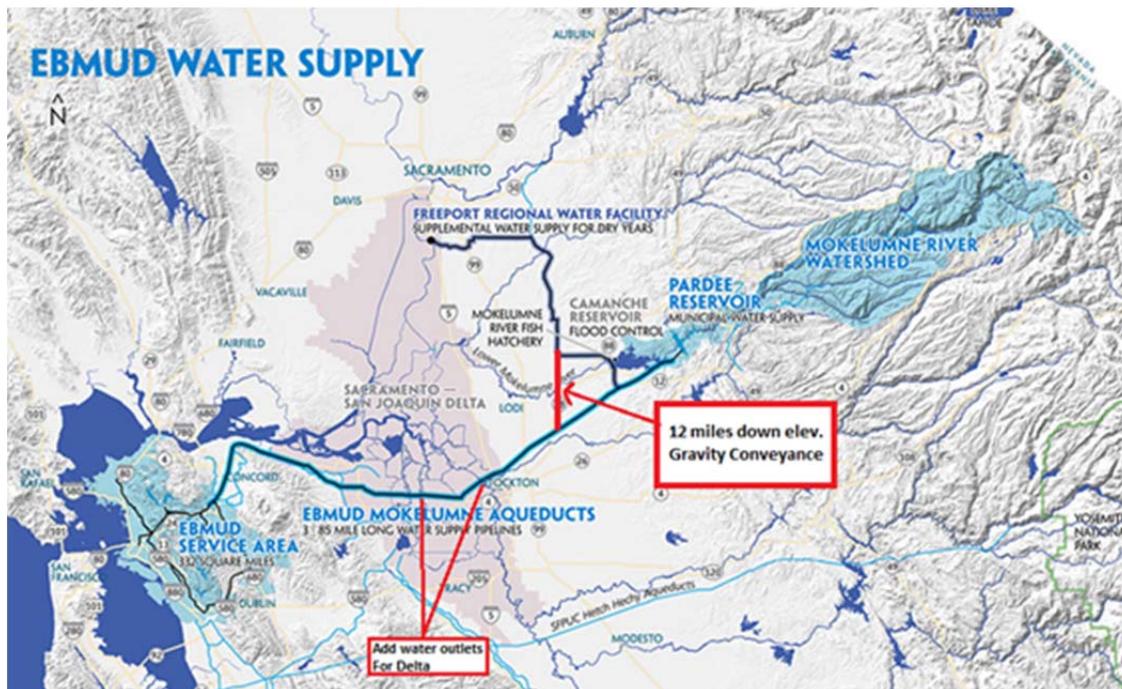
The American River does not have the storage on it to hold back the water, so the Folsom Dam spills over month after month.

Why not connect to the [Folsom South Canal](#) via Freeport pipeline extension **10.7 miles** south to connect to the EBMUD aqueducts directly with only gravity conveyance?

Folsom South Canal has a capacity of 3,500 Cubic feet per second which can deliver 1,517,340 gallons per minute or 6,704 Acre feet a day, while Folsom dam is letting out water.

Mokelumne Aqueduct only has 700 CFS capacity but it can produce electricity as the water is let out into the Delta either at Stockton or near Holt in the Delta.

This can be a great win for the fish, environment, fresher water in the south Delta and added hydro electric power too!!!



Clean up the water by mixing in more fresh water where it is needed.

More details available upon request.

Thanks for considering this option to the salinity issues in the south Delta and San Joaquin.

Joseph Rizzi -- Cel: 707-208-4508 -- Email: [Joseph\\_Rizzi@sbcglobal.net](mailto:Joseph_Rizzi@sbcglobal.net)

## Brownell, James@Waterboards

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**From:** Joseph\_Rizzi <Joseph\_Rizzi@sbcglobal.net>  
**Sent:** Saturday, April 08, 2017 11:25 AM  
**To:** Brownell, James@Waterboards  
**Subject:** Fix Salinity instead of trying to regulate it?  
**Attachments:** Fish Death Trap 2.doc

**Importance:** High

### Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Adopt Salinity Water Quality Objectives for the Lower San Joaquin River

- **Delta and Environment** – Replacing Clifton Court Forebay 1.5 mile levee with fish screen to end killing of all aquatic life (including endangered species).
- **Delta Flows** – Fill CCF only at night when fish are sleeping, which makes daytime all natural flows. Pumps can operate 24/7 with CCF holding 1 – 3 day supply.
- **Salt** – keep a section free of obstruction, but add shipping lock and tidally controlled louvers to reduce salt water intrusion into Delta.

These 3 are addressed in the attached quick overview of the recommendations; which will:

- Make the Delta a more fresh water region that will support more life.
- 2/3 of each day will have normal flows in the Delta area.
- With Salinity (lock and tidal louvers) studies at Benicia you will know how much the salinity can be controlled.
- No blockage of Delta or straits allowed! Environment and Fish need to have access to freely come and go from Delta.
- Zero fish killed in exporting water from Delta. That should be a goal or requirement. 1.5 mile fish screen will keep fish safely in Delta.
- Reduce costs of operation of Fish capture and relocation, because these would not be needed if water is obtained from screened CCF.
- Export more water – with 0 fish deaths.

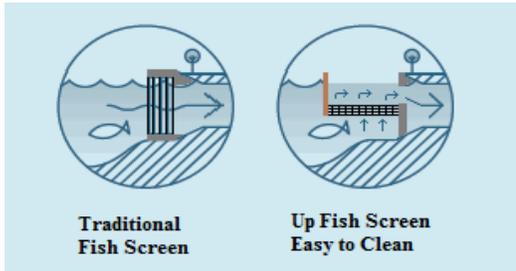
Please see attached for co-equal solutions!!

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# Fish Death Trap

## Clifton Court Forebay

- Fish screen replacing levee to keep Fish in Delta (West Canal) and out of the Clifton Court Forebay (CCF).
- Re-route Central Valley Project intake to receive all it's water from Clifton Court Forebay.
- Retire both fish capture and relocation facilities (no longer needed) permanently to save \$\$\$.



Handy Conversions			
CFS	AF / Day	AF / Year	MAF
3,000	5,948	2,171,121	2.2
9,000	17,845	6,513,362	6.5
12,000	23,793	8,684,483	8.7

CCF holds 29,000 Acre Feet (AF)

1.5 Mile long new fish Screen for CCF

1.5 Million Square Feet of Screen area.

Flows slowed to 0.02 CFS at 12,000 CFS with screen size 0.0375 x 0.0464

Req. = flow > .2 CFS with screen 0.156 x 0.0938

### Operationally:

- Clifton Court Forebay – Originally was an island but converted to water storage for SWP to allow pumping at night (when fish are sleeping and power is cheaper) and holds 29,000 Acre Feet (AF).
- **UP Fish Screen** at CCF intake – As pictured above the fish can swim under the screen and the screen is between the surface and bed of the water with a boom like floating stopping any floating debris from clogging screens.
- **FLOW** – Pump all day while filling CCF only at night allows the natural flow of (Delta) all day long to flush out any fish that were drawn to the Clifton Court Forebay intake screen area.
- CVP pumps would change it's intake to getting water from CCF instead of river.
- Closing the (no longer needed) Tracy (CVP) and Skinner (SWP) Fish Screen Facilities will eliminate the death of fish and save the cost of operating and trucking the fish to other parts of the Delta.
- Automated water sprayers would periodically clean the new filters as needed.
- With ZERO fish deaths, restriction on pumping will be harder. The improved Delta flows will also help ease restrictions. Win for fish, Delta, environment and export water!!!



# Salinity Control - 3D Delta Modeling needed to convince DWR

4 related 3-dimensional hydrodynamic water quality models need funding:

- **Keep  $\frac{3}{4}$  of the strait un-blocked** with  $\frac{1}{4}$  blocked with a shipping lock and tidally controlled louvers
- **Keep  $\frac{1}{2}$  of the strait un-blocked** with  $\frac{1}{2}$  blocked with a shipping lock and tidally controlled louvers
- **Keep  $\frac{1}{4}$  of the strait un-blocked** with  $\frac{3}{4}$  blocked with a shipping lock and tidally controlled louvers
- **Keep  $\frac{1}{12}$  of the strait un-blocked** with  $\frac{11}{12}$  blocked with a shipping lock and tidally controlled louvers

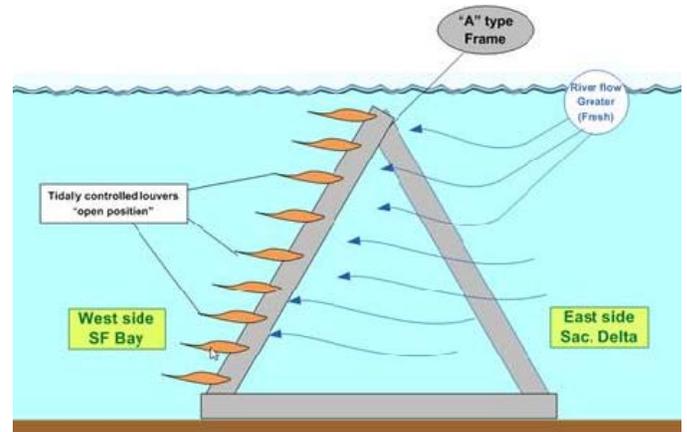
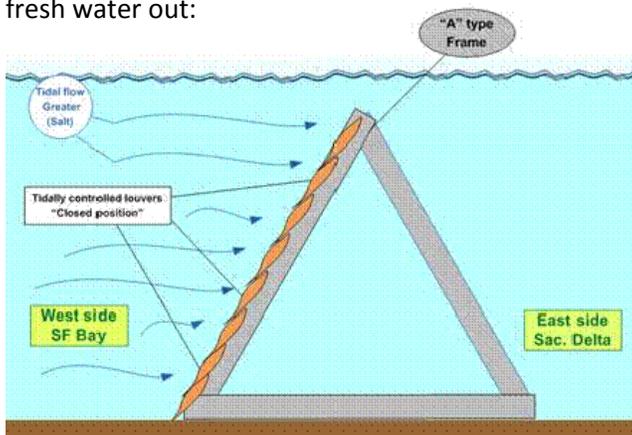
**NOT** a DAM, Sill or Barrier as previously studied!!

One section always left open (un-obstructed in any way) for fish and small water craft.

With  $\frac{1}{4}$  of strait blocked (south side with shipping channel and tidally controlled louvers):

- 30% to 65% reduction of the salt water intrusion into Sac. Delta area?
- Redirect salt water push into Grizzly Bay? Not into Sac. Delta?
- Reduced salt water flow into Delta due to reduced opening across the straits
- Maintains fresh water flow out to the SF bay.
- Lock would make the ship passage by the 3 Benicia bridges safer. (ie.. Cosco Busan hit Bay Bridge)
- PPIC reported that 71% of water released from reservoirs to the North is for salinity control for water exports, 18% for fish. (30% of 71% = 21% in Dry year 12 MAF x 21% = **2.5 MAF** or WET 48 MAF x 21% = **10 MAF**)
- **More Fresh water to export while keeping more water in our Northern reservoirs.**
- **More of a fresh water Delta will add wildlife and help the environment grow and thrive.**

The following is what the tidally controlled louvers would look like, stopping the salt water intrusion while allowing the fresh water out:



NOAA Chart of the Benicia area is great to see how reducing and redirecting the tidal flow to Grizzly Bay by blocking the shipping channel and adding tidally controlled louvers which will have a dramatic effect on salinity control when you keep in mind that salt water is heavier than fresh water.

<http://www.charts.noaa.gov/OnLineViewer/18656.shtml>

