

## Navasero, Anthony@DeltaCouncil

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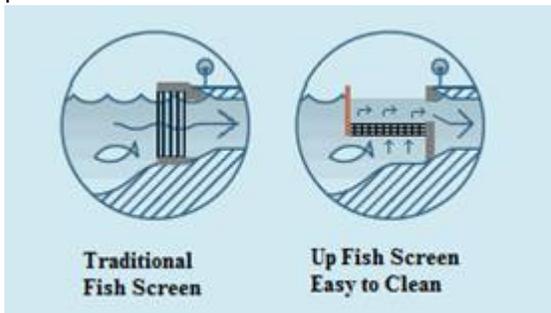
**From:** Joseph\_Rizzi <Joseph\_Rizzi@sbcglobal.net>  
**Sent:** Thursday, August 4, 2016 5:09 PM  
**To:** Amendsingle, Oal@DeltaCouncil  
**Subject:** Opposed until proper Screens are in place at Clifton Court Forebay.  
**Attachments:** Fish Death Trap.pdf

**Importance:** High

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**Co-Equal goals!** – protect the fish now and **stop listening** to those that say proper screens **cannot** be installed. See following 2 options:

- 1) **UP Fish Screen** at CCF intake – As pictured below the fish can swim under the screen and the screen is between the surface of the water bed with a boom like floating stopping any floating debris from entering the **Up Fish Screen** area. Using Google Maps in the the calculated the area in CCF intake being 356,083 Square Feet that can support the **Up Fish Screen** area. The recommended hole size on fish screens (in inches) are currently (0.0938 x 0.1563) and this option would use 16 x 14 screen with a 0.025 wire size which makes the holes about 1/3 (0.0375 x 0.0464) the recommended size for fish with a 12,000 CFS volume of water would have a flow rate ½ (about 0.1 CFS through the screens) the recommended 0.2 CFS. By design these **Up Fish Screens** are easier to clean with downward water pressure.



- 2) Traditional Fish screens or **Up Fish Screens** could alternatively be installed along the eastern wall of the Clifton Court Forebay(CCF) which as in the attached picture in the yellow boxed line to the dirt berm between CCF and the West Canal (old river) is 570 feet and the dirt berm is 200 feet wide. With 7,800 feet (**1.5 miles**) in length and 570 feet wide would give you about 4,500,000 square feet of Up Screen area. This extremely large screen area would slow the 12,000 CFS water to 0.007 CFS as it passed by the screens. The added 200 feet of berm space once removed would increase the West Canal (Old River) an extra 200 feet in width.

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# Fish Death Trap

## Clifton Court Forebay

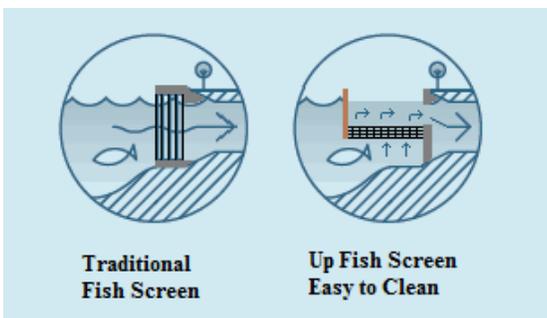
Fish screens CAN and should be installed to Keep Fish in Old River and out of the Clifton Court Forebay (CCF) and the Central Valley Project intake channel needs to be connected only to Clifton Court Forebay only, that way both the Tracy and Skinner fish Facilities CAN be permanently shut down to save \$\$\$ and stop death.

DWR has stated that is was going to put on fish screens at CCF and then DWR said it is not possible. Now DWR says that it wants to put in "State of the Art Fish screens" but they cannot at CCF. The picture below shows a typical fish screen that has a small area to pull the fish through the opening along with all the water and at CCF the current gates are setup for 12,000 CFS, so it can reasonable be seen that given this only configuration and required to only work with the existing intakes to CCF that it would not work.

Clifton Court Forebay is a death trap to 30%+ of all fish that is sucked into this trap by the pumping which creates flows into CCF as if it was the way to the sea. This death trap needs to be properly screened, prior to doing any huge \$15+ billion projects. If DWR can not figure this out, how can the "Water Fix" work? (Which still does not address CCF!!!)

Now let us look at 2 other reasonable and low cost options:

- 1) **UP Fish Screen** at CCF intake – As pictured below the fish can swim under the screen and the screen is between the surface of the water bed with a boom like floating stopping any floating debris from entering the **Up Fish Screen** area. Using Google Maps in the second picture below google calculated the area in CCF intake being 356,083 Square Feet that can support the **Up Fish Screen** area. The recommended hole size on fish screens (in inches) are currently (0.0938 x 0.1563) and this option would use 16 x 14 screen with a 0.025 wire size which makes the holes about 1/3 (0.0375 x 0.0464) the recommended size for fish with a 12,000 CFS volume of water would have a flow rate 1/2 (about 0.1 CFS through the screens) the recommended 0.2 CFS. By design these **Up Fish Screens** are easier to clean with downward water pressure.



[https://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin\\_ScreenCriteria.asp](https://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp)  
<https://www.metroscreenworks.com/screenwire.php>  
<http://escholarship.org/uc/item/28m595k4>

← Screen Size Requirements link  
 ← Sample screen sales site  
 ← Pre-Screen Loss and Fish Facility Efficiency

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

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# Fish Death Trap - Clifton Court Forebay

Traditional Fish screens or **Up Fish Screens** could alternatively be installed along the eastern wall of the Clifton Court Forebay (CCF) which as picture below from the yellow boxed line to the dirt berm between CCF and the West Canal (old river) is 570 feet and the dirt berm is 200 feet wide. With 7,800 feet (**1.5 miles**) in length and 570 feet wide would give you about 4,500,000 square feet of Up Screen area. This extremely large screen area would slow the 12,000 CFS water to 0.007 CFS as it passed by the screens. The added 200 feet of berm space once removed would increase the West Canal (Old River) an extra 200 feet in width. The 3 proposed "Water Fix" intakes, each with a capacity of 3,000 cfs, situated on the river bank and would range from 1,259 to 1,667 feet in length.



## Operationally for two alternatives:

- 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 31,000 Acre Feet (AF).
- 11 hours on 1 hour off – Intake to CCF would be stopped for 2 hours a day to allow the natural flow of Old River to flush out any fish that were drawn to the Clifton Court Forebay intake screen area.
- Closing the old 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.
- CVP pumps would change it's intake to getting water from CCF instead of river.
- With ZERO fish deaths, restriction on pumping will be harder. The improved Delta flows will also help ease restrictions. Win for fish, environment and export water!!!
- **Optional** - Salinity Restriction between Benicia and Martinez by 1) Keep one section between bridge supports always open. 2) add a shipping lock system in the shipping channel to protect 3 bridges from accidents (also blocking largest influx of salt water). 3) add horizontal tidally controlled louvers (like dryer vent) between 10 of the 12 bridge supports to restrict salt water incursions but allow fresh water to freely flow to the sea.