

**Reroute Delta drainage with a network of pipes and discharge at a common point**

Category: (To be developed)

**Resources Area:** Water Quality, WQ-S-1

Related Options: WQ-S-3

**Resources Issue:** Salt within the Estuary negatively affects agriculture, industrial, and municipal uses of Delta water, and may negatively affect Delta (freshwater dependant) species. In addition, agricultural waste discharges from Delta Islands contain dissolved organic carbon that contributes to the creation of unwanted byproducts during the process of drinking water treatment when Delta source waters are diverted to municipal water supply users. The implementation of more stringent regulations on these byproducts requires advanced treatment processes at significant costs to local water agencies. Some recent studies identify Delta island drainage discharges as a source for more than 50% of the dissolved organic carbon measured at the project pumps. The more than 1500 discharge locations within the Delta make it difficult to control dissolved organic carbon at its source. There are related issues that may be partially addressed or impacted to some degree by this option. One issue is the re-introduction of these salts and other compounds into the estuary at a common point which may negatively affect aquatic species. Other related issues include a reduction of organic carbon loading to the estuary which could potentially lead to reduced biological productivity.

**Discussion:** The construction of a network of pipes throughout the Delta for the purpose of collecting drainage for discharge at a common point would concentrate the effects of Delta drainage in one point rather than distribute the effects throughout the Delta. In addition, the quality of export water could be improved if the discharge is located outside the influence of the project pumps. A possible sub-alternative to this action option is the construction of a pipe network that would reroute select island drains that affect particular locations or the use of existing drainage facilities on the islands (canals, etc.) to route the discharge to a common point. This project may require the construction of energy transmission systems at some sites in the Delta to provide power to the pumps to convey the water through the network system. Comprehensive source control programs, which for Delta source waters could include elements such as this option, are often more cost effective and more efficient from a total resource consumption viewpoint.

Objectives addressed: Water Quality General and Specific 2

The collection of all Delta drainage for discharge at one point rather than diluting individual discharges with river water raises the possibility of high levels of contaminants at the discharge point and this would require close review by experts in water quality. The concentrated effects of discharges on fisheries and habitats would require close review by experts in aquatic resources. Plant and wildlife experts would need to analyze collection sites for effects on wildlife, birds, and other biological resources.

**Assumptions:**

- Assume the system will collect subsurface drainage but not rainfall.

- The monitoring of discharge would be required by the Regional Water Quality Control Board (RWQCB).
- Adequate right-of-way could be acquired.
- Sufficient flushing flows exist at the selected discharge point to ultimately move the bulk of the collected drainage into the ocean and prevent its return back into the interior Delta.

**Key Feasibility Factors:**

- Confirm an environmentally and socially acceptable suitable discharge location for the pipe network system could be identified.
- Confirm an environmentally and socially acceptable route for the pipe network system could be identified.
- Confirm the collected drainage to be discharged at a common point meets established discharge standards for this facility.
- Confirm reduced flows in the some waterways would not be detrimental to aquatic resources.

**Implementation Effects:**

- The Water Quality TAC (WQTAC) estimated medium benefits for water uses (matrix WQ-S-1) such as agriculture, municipal, industrial, and recreation uses in the WQTAC report. Only low benefits were noted by the WQTAC for fisheries and environmental uses since they did not have the specific expertise in these areas.

**Most Likely Benefits:**

- The quality of the water in the estuary would be increased through coordinated discharge of salts, pesticides, and organics.
- Organic carbon in the estuary, which contributes to unwanted by-products during the treatment process of Delta source waters, could be reduced as well.

**Other Possible Benefits:**

- Quality of the export water could be increased if the commonly routed drainage water is discharged at a location outside the influence of the project pumps.
- Improved water quality within the interior Delta would result in improved aquatic resources as well.

**Most Likely Negative Impacts:**

- High levels of contaminants can be expected in the pipe network drainage water. Discharge levels may exceed those allowed by the RWQCB.

**Other Possible Negative Impacts:**

- Although aquatic resources might be improved within the interior Delta, the highly concentrated collected drainage might be detrimental to aquatic resources downstream of the discharge point.
- A reduction of organic carbon loading to the estuary could potentially lead to reduced primary productivity.

**Possible Regulatory and Institutional Constraints:**

- CEQA
- NEPA
- DFG Sec 1600 Permit
- Waste Discharge Permit

Other: This action option may entail locating the discharge within the San Francisco Bay to use the tidal action to prevent the collected discharge from finding its way back into the interior Delta. Locating the discharge point within the San Francisco estuary could bring actions from other agencies in addition to the RWQCB such as the San Francisco Bay Conservation and Development Commission (BCDC) and the Environmental Protection Agency (EPA).

**References and Published Materials:** Use Combined TAC Reference List.