

Conservation Corner

A Closer Look at the Delta Tunnels

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I attended an open house on July 28 in Sacramento for the Bay Delta Conservation Plan/California Water Fix, otherwise known as the Delta Tunnels Plan. This is the latest draft in the long process of environmental reviews required under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

When I first learned of the meeting I assumed it would be a hearing with presentations and public comments and so did a number of other people judging by the busloads of sign carrying people and one child wearing a salmon costume that gathered there. That was not the case. It was an open house format with documents and government representatives ready to answer questions. I was given a lengthy and detailed Executive Summary along with several handouts and I went to work trying to educate myself on the project.

The environmental problems in the Delta caused by the pumping of water at the southern edge near Tracy and the resulting flow reversals, entrainment of fish at the pumps and degradation of the estuary are worse now than in the 1980s when the peripheral canal was first proposed. This document states that the overall system as it is currently designed and operated does not appear to be sustainable from an environmental perspective. The anticipated effects of climate change, rising sea levels, and seismic events will add to the problem. This not only exacerbates the environmental problems but threatens California's critical water delivery system. To address these issues the program has two coequal goals of providing a more reliable water supply and protecting, restoring, and enhancing the Delta ecosystem.

I am not aware if a "no project" option was considered in the original proposal. Because of California's geography transporting water through the Delta is a necessary design feature of the existing and in any future water delivery system. The documents predict that the present water delivery system will eventually fail if nothing is done.

Some of the key points taken from the documents are as follows:

- Water will be diverted through three - 3,000 cfs capacity intakes each near Courtland;
- Water flow will be by gravity to the pumps near Tracy;
- Water will be transported to the pumps through 2 tunnels 40 ft. diameter, up to 150 ft. below ground, and 30 miles long;
- Average annual yield is 4.9 million acre feet;
- Maximum diversion of 9,000 cfs at Sacramento River flows of 35,000 cfs and greater with no diversions at flows of 5,000 cfs and less;
- Estimated cost \$14.9 billion to be paid for by agencies relying on the water;
- Proposition 1 funds and other State public dollars will be directed towards environmental mitigation;
- Proposes 15,600 acres of ecosystem restoration and protection;
- Upper bound for water deliveries is not a target, deliveries of less than full contract amounts are consistent with the project purposes;
- Project will reinstate a more natural direction of river flows in the South Delta by 46-160 percent;

- An adaptive management and monitoring program will guide real time operations of the system.

Opposition to the original peripheral canal proposal and now the Delta Tunnels from an environmental view point has been driven by the fear that these projects will result in more water being diverted out of the Delta. The tunnels have been seen as massive water grabs. However, according to the documents the Delta Tunnels proposal with a maximum capacity of 9,000 cfs is 40 percent smaller than the existing system. I assume that is because the existing pumps at the far southern edge of the Delta draw from a much larger body of comingled San Joaquin and Sacramento River water and are larger capacity. The proposed tunnels will only divert from the Sacramento River, thus avoiding most of the ongoing entrainment and flow reversal problems in the south Delta. Water will continue to be exported from the San Joaquin side of the Delta through separate existing facilities. The documents did not say if there are plans for increasing deliveries out of the San Joaquin tributaries.

There was no mention on how the project would be constructed and the resultant impacts on the local environment. This may have been covered elsewhere. A quick calculation on the amount of material to be excavated for the tunnels are in excess of 7 million cubic yards, and that doesn't include the fore bays and vertical shafts that will be required. In comparison, the 31 mile Chunnel under the English Channel consists of 2 tunnels 25 ft. in diameter with one 16 ft. diameter service tunnel. I found no mention of the build-out time for the project in the documents but I was told by one of the engineers that it would be in excess of 10 years.

As I wrote in last month's issue of *The Leader* the legal authority for limiting Delta water export in recent years has been the Endangered Species Act (ESA) which is under constant attack. If the two species targeted by the ESA, the Delta smelt, and the winter-run Chinook salmon, are lost (which unfortunately is likely), one wonders what will become of protection from the ESA. As reported in the August 9, 2015 *Sacramento Bee*, some growers prefer a simpler fix for California's water network: revise the ESA in order to devote more water to agriculture and less to nearly extinct fish such as the Delta smelt. A bill that passed the House of Representatives takes exactly that course.

Opposition to the tunnels is universal and vocal among Northern California fishing organizations and other groups concerned for the environmental health of the Delta. The peripheral canal proposal went to the voters in 1982 and voter opposition resulted in the rejection of the project. It does not look like the Delta Tunnels will be subject to a vote. I am of the opinion that eventually something will be built to improve water transfer through the Delta. We need to know what the other alternatives are.