



Sephton Water Technology

August 25, 2015

Tom Sephton, President
226 West J Street
Brawley, CA 92227

Cell: 760-623-2583
Home: 760-550-6027

Little Hoover Commission
925 L Street, Suite 805
Sacramento, CA 95814

Subject: Little Hoover Commission Recommendation on the Salton Sea

Dear Commissioners,

I've been working at the Salton Sea for more than ten years developing methods to cost effectively recover clean water from the Salton Sea by distillation using geothermal heat as an energy source. This work has been funded by grants from the United States Bureau of Reclamation and the California Department of Water Resources. I've had the pleasure of learning about the Salton Sea both by reading scientific literature, articles, and government reports and by working at the Sea daily.

My company, Sephton Water Technology, is collaborating with the Imperial Irrigation District (IID) to execute one of the three projects partially funded under the Salton Sea Financial Assistance Program. In the project we're undertaking with the IID, we expect to show that the excess salt in the Salton Sea can be concentrated and put to use to capture and store solar energy as heat. This solar heat can be used to produce renewable power on demand or to distill Salton Sea water into pure water for habitat, while benefitting the air quality by covering dry lakebed with water efficient ponds. The roughly six million acre feet of saltwater in the Salton Sea is a resource: a water resource, an economic resource, and an environmental resource.

The current Salton Sea ecosystem is expected to collapse shortly after mitigation inflows stop in late 2017 under the QSA agreements. When the QSA agreements were fully signed in 2003, the State made a commitment, in both policy statements and in acts of the State Legislature, to both restore the Salton Sea and mitigate the damage caused by QSA water transfers. After 2017, the gradual rise in salinity seen since the early 20th century will accelerate dramatically. Salinity in the Salton Sea will rise at approximately a 50% higher rate than would occur without the QSA water transfers. Absent quick restoration action, the salinity will exceed 6% within a year or two. The millions of tilapia that foraging birds depend on are not expected to be able to reproduce above 6% dissolved salts. The Salton Sea is full of life now, but its vital role as a source of food for pelicans and other migrating birds on the Pacific flyway is under imminent threat.

Allowing the Salton Sea to dry up is also a public health threat. After mitigation flows meant to offset QSA impacts stop, the rate of exposure of salt and contaminant laden Salton Sea lakebed will accelerate. The increase in the rate of exposure of lakebed (playa) caused by QSA related water transfers will exceed 1,500 acres per year after 2017. According to the State's 2013 audit of the Salton Sea Restoration Fund, the total exposed playa will exceed 80,000 acres by 2030 if no restoration is undertaken. A substantial portion of that exposed playa will be a source of PM10 dust blown into the communities that surround the Salton Sea. This will increase the already high rate of asthma and cause an increase in lung cancer. Most of the towns near the Salton Sea are disadvantaged communities, ill equipped to cope with the public health threat that an unrestored Salton Sea will cause. Protecting the health of the hundreds of thousands of Imperial and Coachella Valley residents is a State responsibility.

The Salton Sea does not have to be a tale of woe. The renewable energy resources, water resources, and human resources needed to restore the Salton Sea to long term sustainability are present in the region. What is needed is the vision, the political will, and a modest amount of seed funding to get a restoration plan agreed to and implemented. Numerous restoration plans have been put forward over many years. Many proposed plans are technically feasible, several are both technically and politically

feasible, and a few will even pay the cost of implementation by generating revenue over time sufficient to reimburse the capital and operating costs. I've attached a summary of one such proposal as an example of what is possible.

Frequently after work I bike along the Salton Sea shore and enjoy watching flocks of pelicans glide in single file inches above the water against the gold and pink sunset reflected on the water. The Salton Sea is a place of stark beauty and abundant life. The beauty of this environment deserves to be protected for future generations.

I respectfully request the Little Hoover Commission to urge the responsible State agencies, the Governor, and the State Legislature to honor the State's policy and legislative commitment to restore the Salton Sea to a sustainable water resource that supports the environment and the Pacific Flyway, protects the public health from contaminated wind blown dust, and provides economic and recreational opportunities to California's citizens.

Sincerely,



Tom Sephton

President, Sephton Water Technology, Inc.

Sea to Sea Concrete Lined Canal Cost Estimates (with route options)

Capital needs for construction when agreements and permits are ready

Laguna Salada to Salton Sea (short desert route, 900,000 AFY capacity)	41.6 miles
Cost of lined Sea to Sea canal (desert route, 2006 Coachella Canal basis)	\$151,661,714 (in 2015 \$)
Maximum elevation to cross border (west of signal mountain)	300 feet
Maximum elevation to cross border (east of signal mountain)	40 feet
Minimum drop required for flow (Coachella Canal basis, US side)	63 feet
Actual net drop sea level to Salton Sea (2015 Sea levels)	238 feet
Laguna Salada to Salton Sea (longer New River route, 900,000 AFY capacity)	73.4 miles
Cost of lined Sea to Sea canal (New River route, 2006 Coachella Canal basis)	\$267,595,429 (in 2015 \$)
Extend Coyote Canal to north end of Laguna Salada (900,000 AFY capacity)	26 miles
Cost to extend Coyote Canal in Laguna Salada (2006 Coachella Canal basis)	\$94,788,571.43 (in 2015 \$)
Sea of Cortez to south Laguna Salada lined canal (900,000 AFY capacity)	73.4 miles
Cost for Sea of Cortez to south Laguna Salada (2006 Coachella Canal basis)	\$267,595,429 (in 2015 \$)
Lined Seawater Canal cost Sea to Sea Mexico Side (high estimate)	\$362,384,000 (in 2015 \$)
Lined Seawater Canal cost Sea to Sea US Side (high estimate)	\$267,595,429 (in 2015 \$)
Cost of Pumps, Energy Recovery Hydro-Tubines, and Transmission (900kAFY)	\$265,750,000 (in 2013 \$)
Operation and Maintenance cost	\$21,800,000 per year
Total capital cost of seawater canal from Sea of Cortez to Salton Sea	\$895,729,429 (in 2015 \$)