



Position Statement
November 15, 2013

To: SCVWD Board of Directors

Copy: AVCA Members

From: Bob Strain

Subject: AVCA Position on Almaden Lake

Almaden Lake is subject to a Regional Water Quality Control Board (RWQCB) mandate that will require action by the Santa Clara Valley Water District (Water District) by 2018. More specifically:

- Almaden Lake is one of the most polluted bodies of water in Santa Clara County, largely because of a high concentration of methyl mercury ions. Methyl mercury is a water soluble embodiment of mercury that is toxic to both wildlife and humans.
- As part of the Los Alamos Creek system, Almaden Lake is a link in the path that steelhead trout, an endangered species, take from the ocean to their spawning grounds farther up in the mountains. The spawning runs are interrupted because the water in Almaden Lake is too warm, and because Almaden Lake's warm, deep water harbors predatory fish that feed on the smolt as they return to the ocean.

The lake's history has three chapters. The first is Alamos Creek, flowing northward to join Guadalupe Creek just north of Coleman Road, forming the Guadalupe River. The second chapter is from the 1940's, when the land area beside Alamos Creek was quarried to recover sandstone, a traditional local building material. As most quarries do, the excavated hole filled with water and eventually became one with Almaden Lake. The third chapter comes in the 1980's, when the lake was developed as a park, with a little beach, picnic areas and parking. While swimming worked out well for a while, the presence of bacteria and algae has rendered the water unfit for activities where people come in contact with the water.

The lake is clearly an amenity to Almaden Valley, and it is the position of the AVCA that it should remain, as much as possible, a lake. This is consistent with a plan that the Water District has called Feasible Alternative One, shown on the next page. Alamos Creek is more or less restored to its historical path, with two mini-lakes on each side. This plan includes sealing the lake bottom with five feet of clean fill to isolate existing mercury and mercury compounds from any future lake water. Similarly, the restored creek path will be isolated from the existing mercury-laden sediments. Deep, still water tends to be oxygen-deficient, and that contributes to the formation of methyl mercury. The Water District is examining available water sources for the new lakes. The "Solar Bees" shown in the drawing have been used historically to help mix the water to disrupt the formation of methyl mercury, but their effect has been too small.



While it does not appear in this drawing, the current Almaden Lake has a tiny island that serves as nesting area for herons and other desirable water fowl. Feasible Alternative One proposes to retain that island.

The Water District faces a number of constraints in addition to the mandates of the RWQCB. For one, the available drop from the entry of Alamitos Creek into the lake to the Coleman Road bridge is only two feet. For another, the restored Alamitos Creek must be able to accommodate a 100-year water flow. This means the creek needs to be fairly wide and connect the fixed elevations at the north and south ends of the lake.

The Water District is currently examining injecting oxygen into similar deep stagnant waters at three reservoirs, Stevens Creek, Guadalupe, and Calero Reservoirs, as a pilot study to see if this technology can curb the production of methyl mercury. Oxygen injection would have limited utility at Almaden Lake, because that process would only

mitigate the methyl mercury production in any future lake body that was fed with mercury contaminated water. That treatment cannot substitute for isolating the creek from the balance of the lake; the oxygen rich water would only improve the environment for the non-native fish that are posing a hazard to the steelhead trout.

A solution for the organic contamination from birds is not quite as obvious. While the Canada geese are protected as a migrating species, the fact is that they are largely non-migratory. The weather in Santa Clara County is as attractive to them as it is to us. Some other states allow hunting of non-migratory geese, but that option is precluded by Almaden Lake's location in the midst of residential areas. Other measures should be taken to make Almaden Lake Park unattractive to the geese. One such measure would be to plant as many trees as possible; this particular bird likes meadows. Where grasses are planted, they should not be attractive to the geese. Another possible thought would be to open part of the park as an off-leash dog park. The City of San Jose already does goose egg addling. (This involves rendering the eggs infertile and returning them to the nests.) With a concentration of trees, there is an opportunity to provide nesting boxes for all sorts of birds, but by encouraging owls, falcons and hawks, the Water District might discourage the seagulls.

Other options considered by the Water District include totally filling either one or both of the mini-lakes, turning them into open spaces that match the surrounding open park areas. New open space could exacerbate the Canada goose problem, and developing open space as parkland or athletic fields would present additional operating costs for either the City or the Water District.

Among the options considered by the Water District, Feasible Alternative One has the lowest capital cost, but the cost of using chlorine to render the smaller mini-lake swimmable is estimated to be about \$80,000 per year. Part of that could be recovered from user fees.

On balance, AVCA recommends that the Santa Clara Valley Water District do the following:

1. Pursue Feasible Alternative One as the best strategic approach.
2. Preserve the island as a bird sanctuary, making sure that its vegetation favors herons, not geese.
3. Develop the balance of the park in a way that is as hostile as possible to Canada geese and seagulls.
4. Develop the west mini-lake as a resource for recreational swimming.
5. Open the east mini-lake as a boating and fishing resource.
6. Continue the oxygen injection pilot study and adopt that approach where it offers an advantage in either cost or clean water conservation.