From:

Date: Wednesday, June 10, 2015 at 10:34 AM
To: Larry Goldzband <larry.goldzband@bcdc.ca.gov>
Subject: Sea Level Rise & Bay Fill as per San Francisco Chronicle BCDC interview June 6

Larry Goldzband,
Executive Director, BCDC
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June 10, 2015

Dear Director Larry Goldzband,

In the recent San Francisco Chronicle article of June 6, San Francisco Bay Conservation and Development Commission's Zach Wasserman commented on the need to adjust commission policies to possibly consider larger amounts of bay fill than BCDC has yet permitted, to protect Bay Area infrastructure from sea level rise.

Flood levees are, to a large degree, a permanent commitment to 'flood proofing' bay shore acreage and are therefore bound to create an impetus for inboard development. However, it is essential that this be the final recourse only after all alternatives have proved ineffectual. To control flooding is a most complex challenge, and US Army Corps of Engineers criteria for major bay levees do not begin to incorporate all contingencies.

Each watershed with its complex of tributaries, reflecting distance, speed and volume of storm water runoff presents its own unique hydraulic challenge, coupled with resilience of outfall to marsh or constricted delta. Channels leading to bay have capability for high volume of reflux in low barometric pressure storm systems.

In South Bay, layers of shallow and deep aquifers, in conjunction with subsidence, can accelerate salt water intrusion that will pass beneath super levees and may be accompanied by artesian action from percolation. Proximity of high peaks of Mount Umunhum and Mount Hamilton serve to intensify runoff volume and timing. It is threat of fluvial flooding, of historically greater incidence, that must be considered in siting of bay levees.

In short, please endeavor to fully educate your commissioners in regards all contingencies of a watershed before they acquiesce to placing fill in marsh or low lands around the bay. To some degree each watershed could be considered a separate, self-sustaining compartment, as in a submarine, that can be isolated from adjacent watersheds that may have resolved their flood proofing in an alternate manner.

In particular, water quality treatment plants weigh in critically as to how fluvial interface with rising bay levels is able to be buffered or managed. I think you will find a different scenario for each plant on bay's west shore.

Wish to congratulate BCDC on role which believe it has taken in the upgrade of Redwood Shores levees and water quality treatment plant, and do hope this is cited as precedent for environmental, hydrologically sound accommodation of fluvial constraints with bay level rise events. In particular, am impressed that pickleweed that was rescued and set aside for construction of super levee has reestablished beautifully on levee itself.

Lastly, I would hope that your staff be encouraged to review the various European solutions to sea level rise to see which ones might lend themselves to land uses around San Francisco Bay. My amateur observation is that London's River Thames flood gates might possibly work for Coyote Creek, in consideration of wind and waves driven by storm systems down bay that raise water levels an extra 3 feet.

Sonoma baylands extensive low lying marshland seems similar to Zuider Zee farmland behind Holland levees but each region asks for special thoughtful review and only BCDC seems qualified to meet such a challenge.

Recommend you do not let your commission get corralled into precipitous action or compromise. With the right esprit de coeur flood proofing San Francisco Bay will certainly be expensive but might be fun.

Thank you for your considered assessment of these flood constraints.

Libby Lucas