

LAWRENCE BRAGMAN  
ATTORNEY AT LAW  
912 LOOTENS PLACE • SECOND FLOOR  
SAN RAFAEL, CALIFORNIA 94901-3110  
(415) 459-6060 FAX: (415) 459-6067

September 2, 2016

Douglas I. Wallace  
Environmental Affairs Officer  
Master Plan Update Project Manager  
East Bay Municipal Utility District  
375 11th Street  
Oakland, CA 94607

BY EMAIL ONLY: watershedmasterplan@ebmud.com

Re: East Bay Watershed Master Plan ("Draft Master Plan")

Dear Mr. Wallace:

I am writing to submit some personal comments to your Draft Master Plan and to invite your agency to review the material developed through the multi-year vegetation management study that conducted by the Marin Municipal Water District (MMWD).

Like your agency, the Marin Municipal Water District is responsible for the management of a large urban watershed. MMWD's primary region of responsibility is the Mt. Tamalpais Watershed. The Mt. Tam watershed is approximately 21,000 acres and encompasses the Lagunitas Creek drainage. MMWD manages five reservoirs and related infrastructure in this area.

MMWD's vegetation management plan has gone through several iterations beginning with the adopted 1995 Vegetation Management Plan, the 2012 Wildfire Protection and Habitat Improvement Plan and most recently, the soon to be released Biodiversity Fire Fuel Integrated Plan (BFFIP) of 2016. These plans record a steady migration toward sustainable methods of weed and fire fuel reduction methodologies. The most recent plan, BFFIP, anticipates adoption of a "no pesticide alternative" that our board recommended last year.

There are several factors driving MMWD's no pesticide path. First, last year the International Agency for Research on Cancer reclassified glyphosate as a "probable carcinogen". More recently the California Office of Environmental Health Hazard Assessment (OEHHA) has recommended that glyphosate be listed under Proposition 65. The fact that MMWD's vegetation management occurs exclusively within a public trust watershed lead us to adopt the precautionary principle in its management.

Secondly, during the course of studying the use of glyphosate, MMWD retained the

Comment Letter to East Bay Master Plan  
September 2, 2016  
Page Two

service of Professors Hyun-Min Hwang and Thomas M. Young of the University of California at Davis to study the biological persistence of glyphosate. Contrary to the manufacturer's claim that glyphosate quickly degrades, the Hwang study found that it persisted for at least 84 days when applied to foliage. The study actually was terminated at that point so the ultimate length of persistence was not definitively calculated. (Hwang, 9-10) The clear inference from this study is that glyphosate could well migrate to water courses and streams which feed MMWD's reservoirs. I have attached a copy of the Hwang study for your immediate reference and consideration.

Another consideration for your agency is the documented toxicity that herbicides present to aquatic creatures and habitat. Assuming that these substances act in accordance with their scientifically observed persistence, it is probable that it will enter the aquatic environment. A recent study by the University of Pittsburgh found that glyphosate exposure has the potential to kill large numbers of amphibian larvae and that it induced morphological changes in exposed tadpoles. I have enclosed a copy of the University of Pittsburgh study for your review and consideration.

Finally, MMWD's BFFIP plan emphasizes the importance of resilient forest management practices which will encourage and increase CO2 absorption in our soils. Because of persistent toxicity of many herbicides, including glyphosate, soil biota are decreased which *reduces CO2 absorption*. Hence, it appears that the non pesticide approach may well assist with society's ongoing efforts to remediate GHG through regenerative forestry practices.

In the interests of inter-agency comity, I would invite your board to consider inclusion of MMWD's studies into your process in order to avoid duplication of efforts and to take advantage of our research experience. Please feel free to contact me directly at the above listed offices if you would like to discuss the matter further. In the meantime, thank you for your time and consideration.

Respectfully yours,



LARRY BRAGMAN  
Director, Marin Municipal Water District, Division III