



May 12, 2009

Mr. Kraig Tambomini, Sr. Planner
City of San Rafael, Community Development
1400 Fifth Avenue, 3rd Floor
San Rafael, CA 94901
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Subject: San Rafael Airport Recreation Facility DEIR

Dear Mr. Tambomini:

I am a hydrologist with over twenty years of technical and consulting experience in the fields of geology and hydrology. I have a Master's of Science degree in Geology received from Miami University (Oxford, Ohio) in 1989 and I am a California Professional Geologist and Certified Hydrogeologist. I have been providing professional hydrology services in California since 1991 and routinely manage projects in the areas of flood hydrology, stream and tidal wetland hydraulics and integrated water-land resources management. Most of my work is located in the San Francisco Bay and Coast Range watersheds of California, including the Northern San Francisco Bay Counties. My areas of expertise include: characterizing and modeling watershed-scale and tidal hydrologic and geomorphic processes; evaluating water resource and environmental impacts associated development projects; assessing hydrologic, geomorphic, and water quality responses to land-use changes and causes of stream channel instability. I also teach an annual course on hydrology and geomorphology through the University of California Extension (Berkeley) and provide technical presentations and lectures to public/community and non-profit groups. I co-own and manage the hydrology and engineering consulting firm Kamman Hydrology & Engineering, Inc. in San Rafael, California (established in 1997).

I have worked professionally on a number of wetland restoration and flood control projects within stream and tidal interfaces throughout coastal California and San Pablo, San Francisco, Richardson, Suisun and Tomales Bays. These projects rely on levees to provide adequate levels of flood protection from both creeks and tidal bay waters and I have been responsible for assessing the adequacy of these structures in addressing and/or reducing flood hazards.

I have reviewed the San Rafael Airport Recreational Facility project's DEIR and supporting technical appendices. Based on my review and technical experience it is my opinion that the DEIR does not adequately characterize and quantify potential project-induced impacts associated with flood hazards for the following reasons. The project is located in the 100-year floodplain, exposing people and structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. The DEIR geology appendix corroborates this by stating, "The project would need to be designed to be flood proofed." Yet, there is no defensible geotechnical assessment of the condition of the levee, which evaluates levee height (relative to existing tide and flood levels), structural stability and the overall suitability for providing protection from a 100-year flood. Therefore, the potential for an adverse project impact still exists due to failure risks associated with the likely substandard levees surrounding the project. These levees are relied upon to provide adequate levels of flood protection. A flood-proof building only protects people inside the building, not people and private property potentially trapped outside.

Replacement or upgrade of these levees, an anticipated consequence of the project, would entail substantial impact to the adjacent tidal marshlands. The wetland impacts associated with levee repair or

replacement are also wrongly omitted from the DEIR. The adjacent habitat is home to California Clapper Rail and Salt Marsh Harvest Mouse among other documented special status species in the area. The associated levee construction and maintenance costs should also be defined, because they may balance or out-weigh the revenue generating potential of the facility leaving the City, County and taxpayers with an increased financial burden.

The project also fails to address cumulative impacts associated with sea level rise. Based on my review of the current scientific literature and reports, there is a global and local consensus that sea levels are rising. The rate of rise is constantly debated, but there seems to be a trend in higher and higher predicted rates of sea level rise associated with the most recent studies. The Pacific Institute study¹ presents a range of 1.0- to 1.4-meters (approximately 3.3- to 4.6-feet) by the year 2100. Regardless of the rate of sea level rise, flood and tidal water levels are increasing and the project site will be susceptible to flooding on a significantly higher frequency. This cumulative impact is not addressed in the DEIR and increases the frequency of existing potential adverse impacts. Who will be responsible for damages to levees when they overtop and undoubtedly erode? How can construction of project infrastructure be undertaken in a location (flood zone) which exposes people and their property to existing flooding and, more importantly, one that will experience more frequent flooding in the future? What will be the financial impacts associated with maintenance and repair? This project is completely contradictory to the big-picture planning efforts being espoused by the Bay Conservation and Development District and Association of Bay Area Governments for properties in tidal regions, susceptible to sea-level rise.

In closing, it is my opinion that the potential significant impacts have not been adequately assessed and there is a real potential for project-induced adverse impacts. Until potential impacts are assessed, I recommend that the City does not authorize the San Rafael Recreation Facility DEIR or project. At the very least, the County should require that the project proponents address the deficiencies outline in this letter prior to authorizing the project to proceed.

If you have any questions or concerns, please call me.

Sincerely,



Greg Kamman, P.G., R.HG.
Principal Hydrologist

Attachment: San Rafael Airport Recreational Facility DEIR – Notice and maps

Cc: Farhad Mansourian, Director Public Works, Marin County
Marla Lafer, San Francisco Bay RWQCB
John Klochak, Coastal Program Manager, San Francisco Bay Area, USFWS
Steve Goldbeck, Deputy Director for Climate Change and Legislation, BCDC
Katherine Schaefer, FEMA, Region IX
Tom Kendall, Chief of Planning, San Francisco Corps

¹ Pacific Institute, 2009, The impacts of sea-level rise on the California coast. Paper from the California Climate Change Center, March.