



**SAN FRANCISCO
STATE UNIVERSITY**

ESTUARY & OCEAN SCIENCE CENTER
ROMBERG TIBURON CAMPUS

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August 8, 2019

Lina Velasco
Director of Planning
City of Richmond

Dear Ms. Velasco:

I am writing to express concern that the proposed development at Point Molate has not been adequately evaluated for its impacts on the eelgrass bed that is present downslope along the shore of San Francisco Bay and to request that a new environmental impact report be produced. Eelgrass (*Zostera marina*) is a foundational habitat, one that creates living spaces and food resources for many other organisms simply through its presence. It helps to protect shorelines by stabilizing sediments and reducing erosion; as such it is included in a number of new “living shorelines” projects in San Francisco Bay, along with native oyster reefs. It is valued for its potential to store large amounts of carbon in its live and dead tissues (removing carbon from the atmosphere) and may locally ameliorate the effects of ocean acidification by raising the pH of surrounding waters as it photosynthesizes. It is such an important species that it is the subject of global studies to understand factors that affect its conservation and restoration. These include the *Zostera* Experimental Network (ZEN), a collaboration of twenty-five research groups in temperate estuaries around the world that began in 2011 to determine eelgrass values and vulnerabilities, and the Smithsonian Institution’s MarineGEO program, a similar global effort to increase understanding of this habitat across many locations beginning in 2016.

I have been studying the eelgrass beds in San Francisco Bay since 2005, and can confidently state that the Point Molate eelgrass bed is one of the *most pristine*, so much so that I chose it to represent San Francisco Bay in the numerous ZEN and MarineGEO studies that are occurring across a global scale. It is vital habitat for many species of wildlife, including leopard sharks and bat rays, which come into the bed to feed on small invertebrates that live among the plants. Bay pipefish are abundant, as are other fish such as shiner surfperch, and these and others serve as food for species of concern including chinook salmon, sturgeon, and steelhead. Eelgrass beds provide refuge, including protected foraging and a place to rest, for juvenile salmon as they make their way down the estuary and out to the ocean. Pacific herring, which represent the only commercial fishery in San Francisco Bay, frequently spawn on the eelgrass along this reach of shoreline, and Dungeness crab use the bed as nursery habitat. Wading and diving birds stop to feed among the eelgrass blades as they follow their migratory routes along the Pacific Flyway. Further, unlike most beds in the bay that are only accessible by boat, the Point Molate eelgrass bed is visible and accessible from shore, providing valuable educational opportunities for the



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community and many students, including mine from San Francisco State University. This very healthy and vigorous eelgrass bed has served as a donor of shoots and seeds for restoration projects in a number of other locations in the bay, thus serving as a source for enhancement of this critical resource bay-wide. In addition, Point Molate offers a rare opportunity for strong connectivity between the land and sea, allowing wildlife to move between the hills, the shore, and the bay; maintaining and augmenting this connection will permit upward migration of bay habitats in an era of rapidly rising seas. At the same time, eelgrass at the site is actively accreting sediments, buffering wave action, building carbon stores, and locally increasing pH levels as surrounding waters become more acidic. The importance of these many services in the face of a wide variety of climate change-related impacts has only been recognized in the last 5-8 years.

Development of the slopes above the Point Molate eelgrass bed, which I understand is being proposed at much greater levels than previously, could negatively impact its many values and services. Potential impacts include, 1) sedimentation that decreases light to the plants, making photosynthesis difficult and burying seedlings; 2) fertilizer runoff from landscaping leading to blooms of algae, which can outcompete eelgrass for light, and which can draw down oxygen when the algae decompose, at the expense of eelgrass and associated organisms; 3) runoff that includes other detrimental materials, including oil, gasoline, tire rubber and brake shoe lining residue from roads, and pesticides used on landscaped areas; 4) increased plastics and other garbage dropped and blown into the bay, which can be a hazard to wildlife that ingest or become entangled in this debris; and 5) increased noise and disturbance of wildlife. Obviously, such damages to the eelgrass bed would reduce the many services that eelgrass provides at the site, as well as greatly limit its value and contribution to the global eelgrass studies that have been underway since 2011.

Degrading or diminishing the eelgrass bed at Point Molate would be unconscionable. The loss of habitat for many dependent species, of ecosystem services such as carbon storage and shoreline protection, of the potential for landward migration of bay habitats with rising sea levels, and of educational and research opportunities are all highly undesirable outcomes. I urge you to conduct a complete, new, environmental impact assessment that considers the compatibility of this development with the continued presence of this resource and its many values.

Sincerely,

A handwritten signature in cursive script that reads 'Katharyn E. Boyer'.

Katharyn E. Boyer
Professor of Biology
katboyer@sfsu.edu