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Subject: Further Comments on Addendum to 2016 Final EIR for Richmond Bay Specific Plan to
Address Campus Bay Project

Dear Mr. Flashman,

This letter supplements my previous letter of November 18, 2020 in regard to the above-referenced project and its uncirculated EIR Addendum. In addition to the Addendum and the 2016 Final EIR for the Richmond Bay Specific Plan (2016 EIR), I have also now reviewed the October 2019 Final Negative Declaration (ND) prepared by the California Department of Toxic Substances Control (DTSC) and the 2019 Final Feasibility Study/Remediation Action Plan (FS/RAP) for the Project site.

My review of these documents only further strengthens my earlier conclusion that the significantly increased rate of sea level rise, as indicated in the most current estimates for sea level rise along the California coast, raises serious issues about the adequacy of the proposed remediation of the Project site under Alternative 3a in the Final FS/RAP. That, in turn, indicates, as my earlier letter stated, that due to the changed circumstance of the significantly increased rate of sea level rise, the uncirculated addendum to the 2016 EIR does not adequately address the significantly increased impacts on humans and the environment due to the in situ treatment of toxic materials at the Project site. As a consequence, it would be a violation of CEQA to consider approval of the Project without reopening the Project's environmental review, as well as reconsidering DTSC's approval of Alternative 3a for the remediation of toxic materials at the Project site.

Like the 2016 EIR, DTSC's Final FS/RAP for the Project site include a section (Section 4.7 – beginning a p.63) discussing sea level rise and its potential impact on the adequacy of the Remediation Action Plan. However, the estimates of maximum sea level rise by 2050 and 2100 are taken from a 2011 report by the California Ocean Protection Council. That report identified the maximum expected sea level rise by

2050 as 14 inches, and a maximum sea level rise of 55 inches by 2100. By contrast, the latest state guidelines on expected sea level rise in California, cited in my November 18th letter, identify one foot of sea level rise by 2030, 3.5 feet by 2050, and 7.6 feet by 2100. As I also noted in that letter, even these amounts may be underestimates.

The FS/RAP discusses the potential of the proposed remediation options to be affected by sea level rise, and concludes that the safeguards under Alternative 3a are likely to be sufficient to prevent any significant impacts. However, that assessment is based on a maximum 55 inches of sea level rise being reached by 2100. It does not follow that those safeguards will suffice to avoid significant impacts if sea level rise of 42 inches or more would occur by 2050 or perhaps even earlier. Indeed, as I pointed out in my earlier letter, a 7.6 foot rise in sea level is likely to raise the groundwater level to where it would invade the contaminated areas, including areas that currently contain buried and still untreated pyrite cinder deposits that could, upon exposure to water, produce sulfuric acid. That sulfuric acid would then serve to mobilize the various toxic metals and arsenic that would remain after in-situ treatment. However, the damaging impacts would go beyond that.

Part of the proposed remediation involves placing a biologically active permeable barrier (BAPB) to remove heavy metals from the contaminated groundwater prior to it entering the East Stege Marsh. However, the BAPB only extends upward to +10 feet from current mean sea level. However, current groundwater levels already fluctuate seasonally between 7 and 10 feet above mean sea level in the northern part of Lot 3, down to 3-5 feet above mean sea level in the southern portion. As the FS/RAP acknowledges, with sea level rise, the groundwater levels might even exceed the top of the BAPB with 55 inches of sea level rise. With 7.6 feet (~91 inches) of sea level rise, not only would the groundwater overtop the BAPB, but it would appear likely to cause surface flooding on the site.

It is my understanding that, at the Planning Commission public hearing, a representative of the project proponent asserted that the site would actually have a final surface height of seven feet above current groundwater levels. Thus, it would appear that 7.6 feet of sea level rise might overtop current surface levels by approximately seven inches. However, that does not take into account the additional increase in sea level during a king tide or storm surge, which could be as much as an additional 2-3 feet. Neither the 2016 EIR nor the DTSC ND contemplated increased water levels to this extent. Not only would this result in extensive flooding of the Project site, but depending on the effectiveness and timeliness of the in situ remediation measures, it would also be likely to result in the spread of contamination across the surface of the Project site and beyond – an impact contemplated neither by the 2016 EIR nor the DTSC's 2019 ND.

In light of these previously unforeseen risks from accelerated sea level rise, both the Project and plans for toxics remediation need to be reconsidered. In particular, the 2019 final FA/RAP concluded, based on the analysis of the nine relevant factors, that Alternative 3a was preferable to Alternative 6 as a remediation plan for subterranean and groundwater toxics on Lots 1,2, and the upland portion of Lot 3. However, as laid out in this letter, with the increased rate of sea level rise, the overall protection of human health and the environment, compliance with ARARs, and long-term effectiveness and

permanence of Alternative 3a have all decreased significantly. The increase in the rate of sea level rise would not, however, have any significant effect of Alternative 6. This the balance of NCP Evaluation Criteria between the two alternatives has also changed. This the 2019 final FA/RAP needs to be reopened and reconsidered prior to moving ahead with implementation. Likewise, consideration of approval for the Project should be deferred until the 2016 EIR has been appropriately supplemented.

In addition to the concerns raised by the increased rate of sea level rise and its interaction with the subterranean and groundwater contaminants at the Project site, there are further concerns because of the Project site's location close to the Hayward fault in an area that would be subject to both severe ground shaking and liquefaction in the event of a major earthquake on that fault. The Hayward fault had its last major earthquake more than 150 years ago. There is general agreement among seismologists that another large earthquake, of magnitude as great as 7.1, is very likely within the next twenty years. While both the 2016 EIR and the DTSC ND addressed the risk of an earthquake and proposed mitigation for possible impacts, neither considered the degree to which those impacts would be increased by a concomitant increase in the rate of sea level rise. As noted, the sea level is now expected to rise by one foot in the next ten years, by 3.5 feet by 2050, and by 7.6 feet by 2100. Both the 2016 EIR and the DTSC ND acknowledged that extensive layers of sediment and bay mud underlay the Project site. These will result in severe ground shaking and liquefaction during a major earthquake. The additional liquid layer caused by sea level rise will only further increase those hazards. (See, e.g., https://secure.tcc.co.nz/ei/images/ICEGE15%20Papers/Quilter_480.00.pdf; https://secure.tcc.co.nz/ei/images/ICEGE15%20Papers/Fraser%20109.00_.pdf.) While the 2016 EIR concludes that pilings driven down 50 feet will provide adequate safety and stability against ground shaking and liquefaction, those conclusions need to be revisited in light of the increased risk posed by accelerated sea level rise. Not only is there an increased risk to the buildings and their occupants, if the buildings sink due to liquefaction, contaminants contained under the cap may be pushed upwards, especially if, as seems likely, the earthquake also damages the integrity of the cap. The resulting surfacing of contaminants would greatly complicate evacuation and cleanup of the site and repair of the cap. Again, all of this needs to be addressed through supplementation of the environmental review of both the Project and the FA/RAP.

Sincerely,



Matt Hagemann, P.G., C.Hg.