

NORTH WATERFRONT COVE LLC

Rafael Montes, P.E.
Senior Engineer
Bay Conservation and Development Commission
455 Golden Gate Avenue, Suite 10600
San Francisco, CA 94102-7019

Dear Mr. Montes:

We write to respond to questions raised by the Engineering Criteria Review Board of the BCDC in a meeting on January 24, 2019 related to the seismic safety of the Northern Wharf Structure at the proposed Encinal Terminals Development in Alameda, California.

Background

There are three structures that make up the Encinal Terminal Wharf: the 1924 concrete/timber structure "C1", the 1960 concrete structure "C2", and the timber wharf deck. The timber wharf will be demolished with the new development. Studies have been undertaken on the two concrete portions of the wharf, in order to devise a retrofit scheme to preserve the concrete wharves, as was presented to the ECRB on January 24, 2019.

The geotechnical evaluation of the soil conditions supporting the piles supporting the wharf structures found that the site is vulnerable to slope deformation during significant earthquakes. The soil hazard on the site is largely due to a significant layer of "Young Bay Mud" (YBM), an extremely weak soil commonly present on the San Francisco Bay Area waterfront. At the Northern end of the site, the YBM exceeds a thickness of approximately 40-feet and is predicted to laterally displace up to 3-feet in a large earthquake.

Seismic Design Criteria

The BCDC Engineering Criteria Review Board (ECRB, the Board) required that the publicly accessible waterfront amenity improvements for the proposed development meet a rigorous seismic safety standard equivalent to that of a new structure (Meeting Minutes of November 1, 2017). The ECRB further directed that the proposed development improve (seismically retrofit) the maximum feasible area of the wharf to address the seismic hazard and that the structure achieve Life-Safety/No Collapse under the BSE-2N and BSE-1N hazard levels (Schematic Structural Design Engineering Criteria, Moffatt & Nichol, December 13, 2018).

Wharf Modifications

To meet the seismic safety criteria, the maximum feasible extent of the concrete wharf is proposed to be seismically strengthened by installing new lateral load resisting foundation pile elements connected to the existing wharf structure with tuned viscous damping devices to allow the structure to resist lateral accelerations and accommodate the kinematic slope displacement. This strategy and the criteria proposed by the design team were approved in the January 24, 2019 meeting.

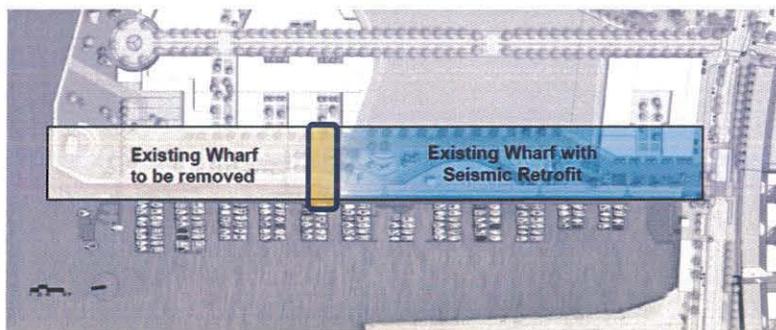
The design team had also indicated to the ECRB that the non-retrofitted portions of the wharf that were founded in 40-feet or more of Young Bay Mud at the Northern end of the site were at risk of collapse and could not be feasibly modified to prevent collapse during the large scale seismic event specified in the approved criteria. During the January 24, 2019 ECRB meeting, concerns were raised by the board members regarding the safety of the non-retrofitted wharf, specifically with regard to allowing public access on a portion of wharf that cannot meet the same seismic standards as the retrofitted portion. Because the ECRB could not recommend allowing public access to this portion of the wharf, it was suggested that we work with staff and further evaluate the safety of those portions of the wharf (Northern wharf) that are infeasible to retrofit, to see if public access was safe.

Addressing Safety Concerns

To address the concerns, the design team evaluated the impacts to the Northern wharf area under multiple seismic scenarios. It was determined through this study that, without a retrofit scheme for the Northern portion of the wharf, there is no significant seismic event in which the design team could guaranty non-collapse and therefore could not guaranty life safety. This public safety concern cannot be feasibly overcome by modifying the existing structure and represents an untenable liability to the development team. Since the safety of future occupants on that portion of the Northern wharf cannot be guaranteed, public access to a waterfront promenade cannot be allowed on that portion of wharf.

Wharf Demolition

The Northern wharf will ultimately be demolished, at approximately Station 10+00 (shown below in orange). Total Northern concrete wharf demolition in this area is approximately 70,000 s.f. Station 10+00 was selected because it is the area where ENGEO has safely determined that the Young Bay Mud horizon is less than 40', and where the retrofit scheme can be utilized. If there is a period of time when the southern portion of the retrofitted wharf has been completed



and is accessible, but before demolition on the Northern wharf has been completed, the Northern wharf will be fenced off and access denied to it, until it is removed.

We thank you for the opportunity to respond to the Board and appreciate your consideration in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael S. O'Hara". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Michael S. O'Hara

Director of Forward Planning