SUMMARY OF FINDINGS FROM PRELIMINARY GEOTECHNICAL FEASIBILITY REPORT FOR THE TERMINAL ONE PROJECT

The Preliminary Geotechnical Feasibility Report for the Terminal One Project prepared by ENGEO Incorporated and dated January 14, 2015 includes the following findings, conclusions, and recommendations.

Analysis of Subsurface Conditions

ENGEO found that the entirety of the Terminal One site is underlain by:

- Artificial fill with a loose to medium dense consistency placed at the Bay margin between 1915 and 1942, generally ranging from 4 to 15 feet thick, except in the area of a likely historic swale located along the western edge of the site where fill depths of between 20 and 30 feet were found;
- A layer of Young Bay Mud (YBM) consisting of soft to very soft silty clay and clayey silt at thicknesses ranging from zero at the northern edge of the site to greater than 40 feet near the site's southern shoreline;
- A narrow layer of stiff to hard clayey sand; and
- A weathered bedrock condition of the Franciscan Formation.

Suitability for Development

ENGEO concludes:

> "the site is suitable for the proposed development from a geotechnical viewpoint, provided the geotechnical recommendations in this report are properly incorporated into the design plans and specifications."

Geotechnical Concerns and Recommended Mitigation

ENGEO's Preliminary Geotechnical Feasibility Report lists the following geotechnical concerns and recommended mitigation measures:

1. **Seismic Hazards**.

Hazard	Mitigation
a. Ground shaking	Compliance with current California Building Code
b. Liquefaction-induced ground surface disruption, settlement of up to 5 inches, and lateral spreading of up to 1 foot along southern shoreline in the area of the historic swale	Ground improvement strategies to densify soil, including soil removal in swale area and replacement with recompacted engineered fill or, in the alternative, in-place soil densification measures such as deep dynamic compaction (DDC), rapid impact compaction (RIC), or the Mammoth Vibro Tamer method (MVT)
c. Ground lurching	No mitigation necessary
d. Tsunami	Raise site grades or construct protective berms; Develop warning systems and evacuation plans

2. **Site Settlement**.

Hazard	Mitigation
a. Static settlement of YBM deposits due to civil fill and building loads	Surcharge areas of site which will receive, or be subject to building loads, with the added civil fill soil to be removed once settlement under the planned loading has been achieved and with wick drains to be installed on an as needed basis to reduce surcharge time. In the alternative, lightweight fill combined with subexcavation of existing fill can be used to raise the level of the site

3. **Shoreline Stabilization**.

Hazard	Mitigation
a. Consequential slope deformation and lateral spreading of YBM with estimated seismic displacement of 1 to 2 feet along the shoreline	Shoreline stabilization using deep soil mixing (DSM)

4. **<u>Shallow Groundwater</u>**.

Hazard	Mitigation
a. Impacts of shallow groundwater with respect to utility construction	Dewatering from sumps within utility trenches, with appropriate treatment and sampling if contaminated groundwater is encountered
b. Impacts of shallow groundwater below-grade podium construction	Dewatering during construction, with below grade walls of parking podium designed for full hydrostatic conditions and waterproofing and engineered to address hydrostatic uplift
c. Impacts of shallow groundwater and relatively impermeable YBM relative to design of on-site storm water treatment facilities	Design on-site storm water treatment facilities to accommodate reduced infiltration rates of the in-situ soils occasioned by shallow ground water and the relative impermeability of YBM deposits

Preliminary Character of Geotechnical Findings, Conclusions, and Recommendations

The findings, conclusions, and recommendations of the ENGEO geotechnical report are preliminary in character. A design-level geotechnical exploration and assessment will be performed by ENGEO before development plans are finalized to confirm the findings, conclusions, and recommendations of the preliminary report.