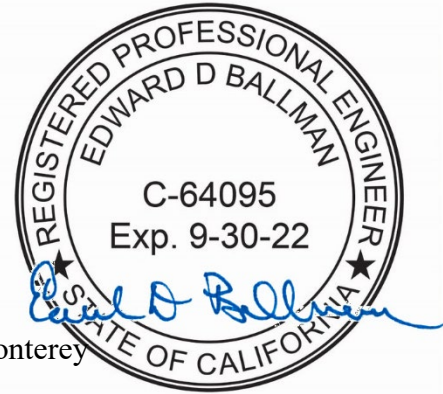# Exhibit L

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Memo

To: Nathaniel Milam, P.E. (Whitson Engineers)

From: Ed Ballman, P.E.

Date: May 27, 2022

Subject: Assessment of Potential Flood Hazard Impacts Related to
         the Susan Street Agricultural Housing Project, County of Monterey

Thank you again for contacting Balance Hydrologics regarding an initial assessment of the potential for flood hazard impacts related to the proposed Susan Street Agricultural Housing Project ('Project') in the community of Pajaro in Monterey County. Specifically, I understand that concerns have been raised as to whether fill placed at the Project site to raise the structures above the modeled overbank flood elevations might cause significant impacts off-site. The flooding source in this case is overflow from the Pajaro River, which the community has experienced in the past and is recognized by the Federal Emergency Management Agency in the pertinent Flood Insurance Rate Map for the site (FIRM Panel 06053C0040G, effective April 2, 2009).

As you are aware, a major effort is currently underway to improve the levee system along the Pajaro River and its lower tributaries. A primary objective of that effort will be to increase the level of protection afforded by the levee system so that the south overbank will be removed from the floodplain from State Route 1 to a point approximately 1.9 miles east of Salinas Road. Therefore, concerns related to potential floodplain impacts are most pertinent for the time until the levee improvements are constructed.

My review was facilitated by the availability of the recently completed hydraulic modeling work prepared by R&F Engineering and Peterson Brustad for the Santa Cruz County Zone 7 Flood Control & Water Conservation District. This work includes thorough analyses, modeling, and mapping of the south overbank flood depths and extents due to various causes such as levee overtopping, flanking, and levee failure under existing conditions for a wide range of flood events from the 2-year (50-percent chance) to 500-year (0.2-percent chance) events. The model update presents a similar picture of overbank flooding extents to that on the FEMA mapping, but at a higher level of detail, particularly with respect to anticipated flood elevations and depths. Information presented in the Hydraulic Model Update report of March 2022 is one basis for my review.

Per the topographic survey information collected by Whitson, the site slopes gradually to the north from the current end of Susan Street. The low point on the property is mapped as just below 29.5 feet (NAVD88), and overland release would generally be to the south along Susan Street or to the east into the adjacent stormwater basin, both at an elevation of approximately 31.5 feet. I understand the originally proposed site grading was predicated on providing building finish floor elevations at least two feet above existing grade, based on the currently effective FEMA flood zone designation (AO, 1' flood depth), but the currently proposed grading plans for the site envision placement of an additional approximately 2 feet of fill so that proposed structures at the site are at least one foot above the 100-year composite water surface elevation per the recently completed Pajaro River study. The 100-year composite water surface elevation varies from 34.4 to 34.5 feet elevation within the project site (email communication, Mark Strudley to Mike Avila, April 12, 2022). The 100-year composite floodplain depths take into account multiple potential causes of flooding such as overtopping, flanking, and levee failure and are shown in Figure 1.
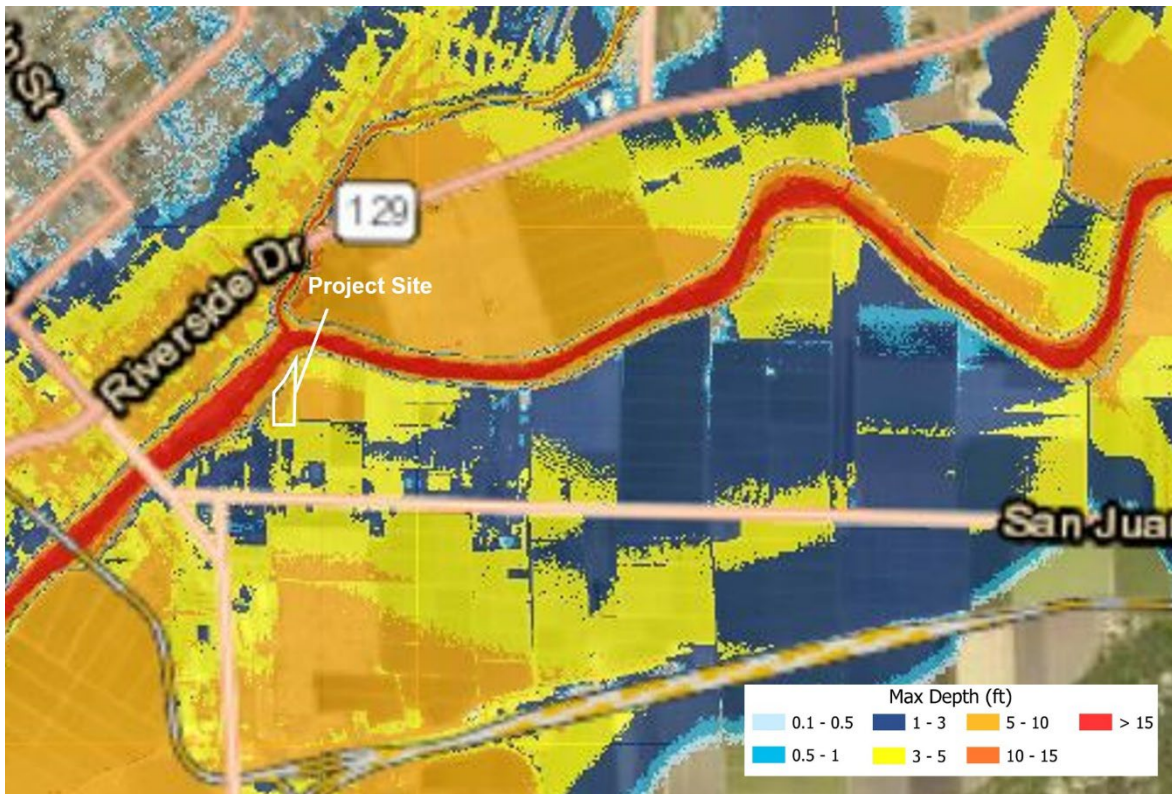

Figure 1. Modeled composite 100-year flood depths. Excerpt from Figure 15 provided by R&F Engineering and Petersen Brustad.

There are two forms of potential interim floodplain impacts to consider prior to the anticipated levee improvements. Each is discussed below:

- *Blocking of overland flow paths*. One potential impact associated with placement of fill in overbank floodplain areas is blocking of overland flow paths. Fill placed in inappropriate locations can impede overland flow in a manner that blocks or redirects flow potentially resulting in increased flood depths in adjacent areas. The pertinent flow paths with respect to the proposed Project are indicated on Figure 2 and show a major flow path for overtopping originating to the east (upstream) and another area of local levee overtopping. Both flow paths head generally southwest or southerly to cross San Juan Road. Additionally, there is high ground located to the west of the Project site that currently would restrict flow in that direction. Based on these factors, it is reasonable to conclude that the north-south orientation of the proposed fill will not adversely block overland flow paths.
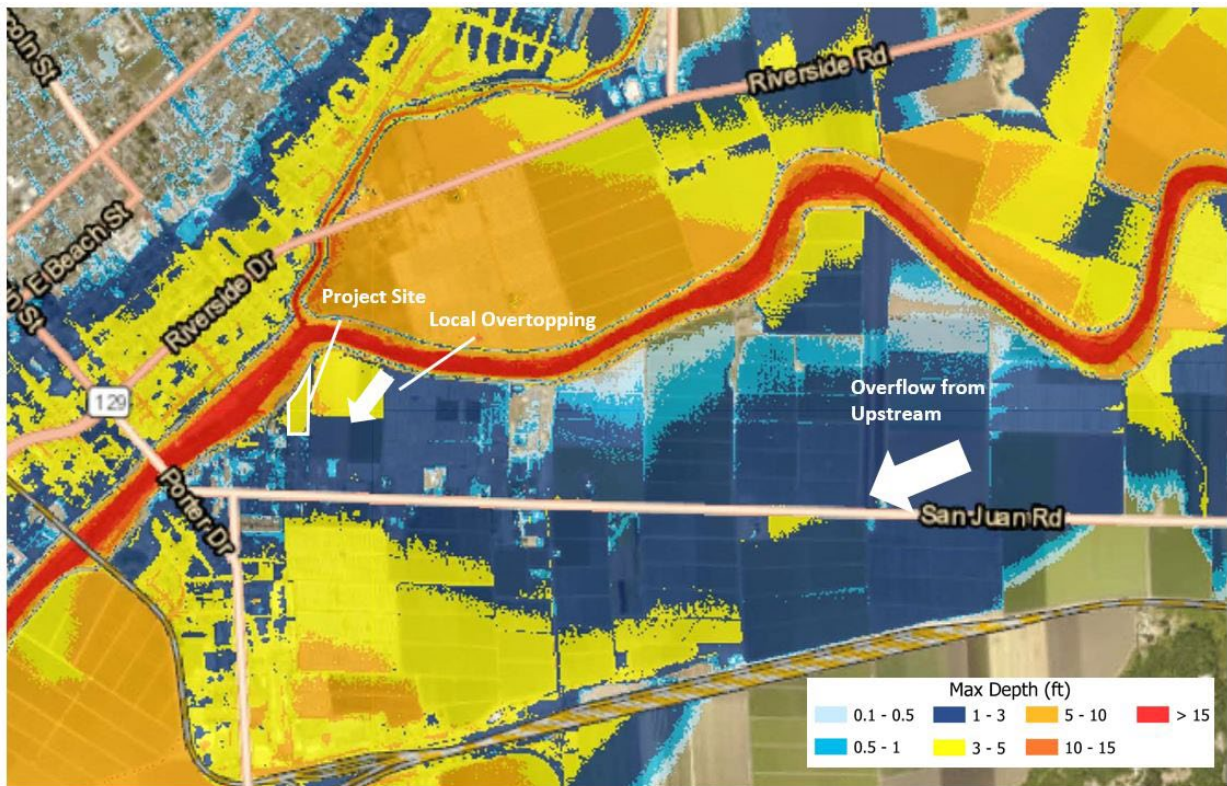

Figure 2. Modeled 100-year flood depths and flow directions. Excerpt from Figure A7 in the Hydraulic Model Update prepared by R&F Engineering and Petersen Brustad.

- *Loss of overbank storage volume.* The second potential impact would be loss of overbank storage volume that would displace overland flows resulting in higher flood elevations on adjacent properties. However, in the case of the proposed Project, Figure 1 shows that flood depths are generally controlled by areas of high ground (typically roadways or the railroad). The proposed fill will result in the loss of approximately 12 acre-feet of floodplain storage, but that volume is less than 3 percent of the apparent volume north of San Juan Road and west of the northly extension of Allison Street and is inconsequential with respect to the total modeled south overbank flow volume. It can be expected that the displaced volume would be conveyed over the linear flow controls without a significant increase in upslope flood depth given the length of the downslope high points.

In summary, review of the 100-year flood depth results presented in the recently completed two-dimensional hydraulic modeling provide substantial evidence that fill associated with the proposed Project will not have a significant adverse impact on adjacent properties.