Michael L. Bench
Consulting Arborist
(831) 594-5151

7327 Langley Canyon Road
Prunedale, California 93907

To: Ms. Mandy Brown
Dan Chapman

Subject: Castilleja School
Tree Canopy Replacement for Trees Planned for Removal

Date: April 18, 2017

Ms. Brown and Mr. Chapman,
Based on the most recent plans, six trees are planned to be removed. Tree # 112, the severely diseased Coast Redwood, has already been removed. The other five to be removed are Trees # 140 141, 142, 143, and 144. The average canopy diameters of these trees were included in the Tree Inventory, dated April 13 and 21, 2016, revised June 13, 2016. The City of Palo Alto requires that removed trees must be replaced on the basis of a method to achieve equivalent canopy diameters. This replacement method is described in the Palo Alto Tree Technical Manual (TTM), Section 3.00.

The Palo Alto TTM describes a method for the calculation of the average canopy growth of boxed trees after ten years. The average canopy diameters for the following box sizes are as follows:
1. A 24 inch boxed tree = 9 foot average canopy diameter.
2. A 36 inch boxed tree = 12 foot average canopy diameter.
3. A 48 inch boxed tree = 15 foot average canopy diameter.

In my opinion, these average canopy diameter estimates are conservative. If replacement trees are healthy and vigorous at the time of planting, their canopies should be at least these diameters, but many would be larger after 10 years.

When a tree would be removed, the quantity and size of replacement trees, required to satisfy the replacement requirement, can be calculated on the basis of these average canopy diameters. The canopy diameters of individual trees to be removed (noted in the Tree Inventory), must be approximate to the equivalent replacement number of trees, in terms of their total diameter after 10 years.

The attached spreadsheet provides the calculations. As an example, 6 - 24 inch boxed replacement trees are calculated to have a total canopy diameter of all 6 trees of 54 feet in 10 years. Two – 36 inch boxed trees are calculated to have a total canopy diameter of 24 feet in 10 years. Two – 48 inch boxed trees are calculated to have a total canopy diameter of 30 feet in 10 years. The total Gain or Loss of total canopy for each tree by this method provided by the Tree Technical Manual is provided at the right.

1310 Bryant Street
Palo Alto, CA

For all of the 6 trees listed to be removed, by this standard the total canopy will be increased at the end of 10 years. The gains stated in this spreadsheet would be minimal, in my opinion. I expect the actual gains to be greater.

Respectfully submitted,

Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897A
American Society of Consulting Arborists Member