

Appendix C Biological Resources

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
Adobe sanicle (<i>Sanicula maritima</i>)	CR 1B.1	Endemic to California. Found in Monterey and San Luis Obispo counties. Thought to be extirpated from Alameda and San Francisco counties.	Adobe sanicle is found in chaparral, coastal prairie, meadow and seeps, and valley and foothill grassland habitats in clay and serpentinite substrates. It occurs at elevations from approximately 100 to 800 feet.	February – May	No CNDDDB occurrences for adobe sanicle have been documented within 5 miles of the project area. The last observed occurrence of this species in Alameda and San Francisco counties was in 1895; therefore, this species is thought to be extirpated from these counties. No clay or serpentinite soils are present in the project area; therefore, low-quality suitable habitat for this species is present in the southern portion of the project area. Low Potential
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	1B.2	Endemic to California. Found in Alameda, Merced, Napa, Solano, and Yolo counties. Thought to be extirpated from Contra Costa, Monterey, San Benito, Santa Clara, San Francisco, San Joaquin, Sonoma, and Stanislaus counties.	Alkali milk-vetch is found in alkali playa, valley and foothill grassland and vernal pool habitat. This species prefers low ground, alkali flats, and flooded lands. It occurs at elevations below 200 feet.	March – June	No CNDDDB occurrences for alkali milk-vetch have been documented within 5 miles of the project area. The most recent occurrence of this species in the vicinity of the project was in 1959. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential

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Anderson's manzanita (<i>Arctostaphylos andersonii</i>)	1B.2	Endemic to California. Found in Santa Clara, Santa Cruz, and San Mateo counties.	Anderson's manzanita is found in the openings and edges of broad-leaved upland forest, chaparral, and north coast coniferous forest. It occurs at elevations from approximately 200 to 2,500 feet.	November – May	No CNDDDB occurrences for Anderson's manzanita have been documented within 5 miles of the project area. Suitable habitat for this species is present in the southern portion of the project area; however, no manzanita were observed during the January 2015 site visit. Low Potential
Arcuate bush-mallow (<i>Malacothamnus arcuatus</i>)	1B.2	Endemic to California. Found in Santa Clara, Santa Cruz, and San Mateo counties.	Arcuate bush-mallow is found growing in chaparral and cismontane woodland habitats. It occurs at elevations between 50 and 1,160 feet.	April – September	Four CNDDDB occurrences for arcuate bush-mallow have been documented within 5 miles of the project area, including in Big Canyon Park, near Crystal Springs Dam, and at Waterdog Lake. Some suitable habitat for this species is present in southern portion of the project area. Moderate Potential
Beach layia (<i>Layia carnosa</i>)	FE CE 1B.1	Endemic to California. Found in Humboldt, Monterey, and Marin counties. Thought to be extirpated from Santa Barbara and San Francisco counties.	Beach layia is found in coastal dune and sandy coastal scrub habitats. It occurs at elevations from near sea level to 200 feet.	March – July	No CNDDDB occurrences for beach layia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential

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Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, Sonoma, and Yolo counties.	Bent-flowered fiddleneck occurs in coastal bluff scrub, cismontane woodland, and valley and foothill grassland habitats. It occurs at elevations from near sea level to 1,640 feet.	March – June	One CNDDDB occurrence for bent-flowered fiddleneck has been documented within 5 miles of the project area near the junction of Tartan Trail and Crystal Springs Road in Hillsborough. No suitable habitat for this species is present in the project area. No Potential
Blue coast gilia (<i>Gilia capitata</i> ssp. <i>chamissonis</i>)	1B.1	Endemic to California. Found in Marin, San Francisco, and Sonoma counties.	Blue coast gilia is found in coastal dune and coastal scrub habitats. It occurs at elevations from near sea level to 650 feet.	April – July	No CNDDDB occurrences for blue coast gilia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Bristly sedge (<i>Carex comosa</i>)	2B.1	Found in numerous states including California. In California, found in Contra Costa, Lake, Mendocino, Sacramento, Santa Cruz, San Joaquin, Shasta, and Sonoma counties. Thought to be extirpated from San Francisco and San Bernardino counties.	Bristly sedge is found in coastal prairie and valley and foothill grassland habitats. It is typically found along the margins of marshes, lakes, or swamps within these habitats. It occurs at elevations from near sea level to 2,050 feet.	May – September	No CNDDDB occurrences for bristly sedge have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
California seablite (<i>Suaeda californica</i>)	FE 1B.1	Endemic to California. Found in San Luis Obispo County. Thought to be extirpated from Alameda, Santa Clara, Contra Costa, and San Francisco counties.	California seablite is found growing in coastal salt marshes and swamps, playas, and vernal pools. It occurs at elevations between 0 and 50 feet.	July – October	No suitable habitat for California seablite is present in the project area. No CNDDDB occurrences have been documented within 5 miles of the project area. In addition, the project area is outside this species elevation range. No Potential

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Coast yellow leptosiphon (<i>Leptosiphon croceus</i>)	1B.1	Endemic to California. Found in San Mateo and Monterey counties. Thought to be extirpated from Marin County.	Coast yellow leptosiphon is found in coastal bluff scrub and coastal prairie habitats. It occurs at elevations from approximately 30 to 500 feet.	April – May	No CNDDDB occurrences for coast yellow leptosiphon have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Choris' popcorn-flower (<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>)	1B.2	Endemic to California. Found in Alameda, Monterey, Santa Clara, Santa Cruz, San Francisco, and San Mateo counties.	Choris' popcorn-flower grows in mesic chaparral, coastal prairie, and coastal scrub habitats. It occurs at elevations between 50 and 520 feet.	March – June	Two CNDDDB occurrences for Choris' popcorn-flower have been documented within 5 miles of the project area, including southwest of Crystal Springs Reservoir and on a ridge between Mills Creek and Muddy Road in Redwood City. Moderate-quality suitable habitat for this species is present in southern portion of the project area. Low Potential
Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>)	1B.1	Endemic to California. Found in Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties. Thought to be extirpated from Santa Cruz and Solano counties.	Congdon's tarplant is found in alkaline valley and foothill grassland habitats. It occurs at elevations below 750 feet.	May – November	No CNDDDB occurrences for Congdon's tarplant have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Coastal marsh milk-vetch (<i>Astragalus pyncostachyus</i> var. <i>pynchostachyus</i>)	1B.2	Endemic to California. Found in Humboldt, Marin, and San Mateo counties.	Coastal marsh milk-vetch is found in mesic coastal dune, and in coastal scrub, and coastal marsh and swamp habitats. It occurs at elevations from sea level to approximately 100 feet.	April – October	One CNDDDB occurrence for coastal marsh milk-vetch has been documented within 5 miles of the project area in the Upper Crystal Springs Reservoir. No suitable habitat for this species is present in the project area. No Potential

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Coastal triquetrella (<i>Triquetrella californica</i>)	1B.2	Found in California and Oregon. In California, found in Contra Costa, Del Norte, Mendocino, Marin, San Diego, San Francisco, San Mateo, and Sonoma counties.	Coastal triquetrella is found in coastal bluff scrub and coastal scrub habitat. It occurs at elevations from approximately 30 to 330 feet.	Not Applicable	No CNDDDB occurrences for coastal triquetrella have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Compact cobwebby thistle (<i>Cirsium occidentale</i> var. <i>compactum</i>)	1B.2	Endemic to California. Found in Monterey and San Luis Obispo counties. Thought to be extirpated from San Francisco County.	Compact cobwebby thistle is found in chaparral, coastal dune, coastal prairie, and coastal scrub habitat. It occurs at elevations from approximately 15 to 500 feet.	April – June	No CNDDDB occurrences for compact cobwebby thistle have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	1B.1	Endemic to California. Found in Alameda, Contra Costa, Monterey, Marin, Napa, Solano, and Sonoma counties. Thought to be extirpated from Mendocino, Santa Barbara, and Santa Clara counties.	Contra Costa goldfields is found in cismontane woodlands, alkaline playas, valley and foothill grassland, and mesic vernal pool habitats. It occurs at elevations between 0 and 470 meters.	March – June	No CNDDDB occurrences for Contra Costa goldfields have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Crystal Springs lessingia (<i>Lessingia arachnoidea</i>)	1B.2	Endemic to California. Known only near the Crystal Springs Reservoir in San Mateo County. May occur in Sonoma County, but these occurrences need taxonomic verification.	Crystal Springs lessingia grows in cismontane woodland, coastal scrub, and valley and foothill grassland habitat. It often occurs in serpentinite soils and along roadsides. It occurs at elevations between 20 and 650 feet.	July – October	Six CNDDDB occurrences for crystal springs lessingia have been documented within 5 miles of the project area in or near the Crystal Springs Reservoir. No serpentinite soils occur in the project area; therefore, low-quality suitable habitat for this species is present in southern portion of the project area. Low Potential

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Crystal Springs fountain thistle (<i>Cirsium fontinale</i> var. <i>fontinale</i>)	FE CE 1B.1	Endemic to California. Known only near the Crystal Springs Reservoir in San Mateo County.	Crystal Springs fountain thistle is found in serpentinite seeps in openings in chaparral, cismontane woodland, and valley and foothill grassland habitats. It occurs at elevations from 150 to 570 feet.	May – October	Four CNDDDB occurrences for crystal springs fountain thistle have been documented within 5 miles of the project area near the Crystal Springs Reservoir and Edgewood County Park. No suitable habitat for this species is present in the project area. No Potential
Davidson’s bush-mallow (<i>Malacothamnus davidsonii</i>)	1B.2	Endemic to California. Found in Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties.	Davidson’s bush-mallow grows in chaparral, cismontane and riparian woodland, and coastal scrub habitats. It occurs at elevations between 600 and 2,800 feet.	June – January	One CNDDDB occurrence for Davidson’s bush-mallow has been documented within 5 miles of the project area in Belmont; however, this occurrence was last documented in 1897. Suitable habitat for this species is present in the southern portion of the project area. Low Potential
Diablo helianthella (<i>Helianthella castanea</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, and San Mateo counties. Thought to be extirpated in Marin and San Francisco counties.	Diablo helianthella is found in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland habitat. It occurs at elevations from approximately 200 to 4,300 feet.	March – June	No CNDDDB occurrences for diablo helianthella have been documented within 5 miles of the project area. Suitable habitat for this species is present in the southern portion of the project area. Low Potential

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Fragrant fritillary (<i>Fritillaria liliacea</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma counties.	Fragrant fritillary is often found on serpentine soils in cismontane woodland, coastal scrub, valley and foothill grassland, and coastal prairie habitats. It occurs at elevations below 1,350 feet.	February – April	Five CNDDDB occurrences for fragrant fritillary have been documented within 5 miles of the project area near the Crystal Springs Reservoir and Edgewood County Park. No serpentine soils are present in the project area; therefore, no suitable habitat for this species is present in the project area. No Potential
Franciscan manzanita (<i>Arctostaphylos franciscana</i>)	FE 1B.2	Endemic to California. Found in San Francisco County.	Franciscan manzanita is found in serpentinite coastal scrub habitat. It occurs at elevations from approximately 200 to 980 feet.	February – April	No CNDDDB occurrences for Franciscan manzanita have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Franciscan onion (<i>Allium peninsulare</i> var. <i>franciscanum</i>)	1B.2	Endemic to California. Found in Mendocino, Santa Clara, San Mateo, and Sonoma counties.	Franciscan onion is found in clay, volcanic or serpentinite soils in cismontane woodland and valley and foothill grassland habitats. It occurs at elevations from approximately 170 to 980 feet.	May – June	At least nine CNDDDB occurrences for Franciscan onion have been documented within 5 miles of the project area, including near the Crystal Springs Reservoir, Water Dog Lake Trails, and Edgewood County Park. No suitable habitat for this species is present in the project area. No Potential

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Franciscan thistle (<i>Cirsium andrewsii</i>)	1B.2	Endemic to California. Found in Contra Costa, Marin, San Francisco, San Mateo, and Sonoma counties.	Franciscan thistle is found in mesic, sometimes serpentinite, broad-leaved upland forest, coastal bluff scrub, coastal prairie, and coastal scrub habitats. It occurs at elevations from sea level to approximately 500 feet.	March – July	No CNDDDB occurrences for Franciscan thistle have been documented within 5 miles of the project area. Low-quality suitable habitat for this species is present in the southern portion of the project area. Low Potential
Hall’s bush-mallow (<i>Malacothamnus hallii</i>)	1B.2	Endemic to California. Found in Contra Costa, Lake, Mendocino, Merced, Santa Clara, San Mateo, and Stanislaus counties.	Hall’s bush mallow is found growing in chaparral and coastal scrub habitats. It occurs at elevations between 30 and 2,500 feet.	May – October	One CNDDDB occurrence for Hall’s bush-mallow has been documented within 5 miles of the project area in Belmont. Suitable habitat for this species is present in the southern portion of the project area. Low Potential
Hickman’s cinquefoil (<i>Potentilla hickmanii</i>)	FE CE 1B.1	Endemic to California. Found in Monterey, San Mateo, and Sonoma counties.	Hickman’s cinquefoil is found in coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps. It occurs at elevations from approximately 30 to 490 feet.	April – August	No CNDDDB occurrences for Hickman’s cinquefoil have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Hillsborough chocolate lily (<i>Fritillaria biflora</i> var. <i>ineziana</i>)	1B.1	Endemic to California. Found in San Mateo County.	Hillsborough chocolate lily is found in cismontane woodland and valley and foothill grassland habitats in serpentinite soils. It occurs at elevations below 500 feet.	March – April	One CNDDDB occurrence for Hillsborough chocolate lily has been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

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Hoover's button-celery (<i>Eryngium aristulatum</i> var. <i>hooveri</i>)	1B.1	Endemic to California. Found in Alameda, San Benito, Santa Clara, San Diego, and San Luis Obispo counties.	Hoover's button-celery is a vernal pool obligate species. It occurs at elevations below 150 feet.	July – August	No CNDDDB occurrences for Hoover's button-celery have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Indian valley bush-mallow (<i>Malacothamnus aboriginum</i>)	1B.2	Endemic to California. Found in Fresno, Kings, San Mateo, Santa Clara, Monterey, and San Benito counties.	Indian valley bush-mallow is found in rocky and/or granitic soils in chaparral and cismontane woodland habitat. It often occurs in burned areas. It occurs at elevations from approximately 500 to 5,570 feet.	April – October	No CNDDDB occurrences for Indian valley bush-mallow have been documented within 5 miles of the project area. Low-quality suitable habitat for this species is present in the southern portion of the project area. Low Potential
Kellogg's horkelia (<i>Horkelia cuneate</i> var. <i>sericea</i>)	1B.1	Endemic to California. Found in Santa Barbara, Santa Cruz, San Francisco, San Luis Obispo, and San Mateo counties. Thought to be extirpated from Alameda and Marin counties.	Kellogg's horkelia is found in sandy or gravelly openings in closed-cone coniferous forest, maritime chaparral, coastal dune, and coastal scrub habitats. It occurs at elevations from near sea level to approximately 650 feet.	April – September	No CNDDDB occurrences for Kellogg's horkelia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

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Kings Mountain manzanita (<i>Arctostaphylos regismontana</i>)	1B.2	Endemic to California. Found in Santa Clara, Santa Cruz, and San Mateo counties.	Kings Mountain manzanita occurs in granitic or sandstone soils in broad-leaved upland forest, chaparral, and north coast coniferous forest habitats. It occurs at elevations from approximately 1,000 to 2,400 feet.	January – April	Three CNDDDB occurrences for Kings Mountain manzanita have been documented within 5 miles of the project area near Kings Mountain. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential
Loma Prieta hoita (<i>Hoita strobilina</i>)	1B.1	Endemic to California. Found in Contra Costa, Santa Clara, and Santa Cruz counties. Thought to be extirpated from Alameda County.	Loma Prieta hoita is found in chaparral, cismontane woodland, and riparian woodland habitats. It usually grows in serpentinite soils in mesic conditions. It occurs at elevations between 100 and 2,800 feet.	May – October	No CNDDDB occurrences for Loma Prieta hoita have been documented within 5 miles of the project area. Low-quality suitable habitat for this species is present in the project area. Low Potential
Lost thistle (<i>Cirsium praeteriens</i>)	1A	Endemic to California. Thought to be extirpated from Santa Clara County.	Habitat for lost thistle is not known since this species is presumed extinct in California. It occurs at elevations below 320 feet.	June – July	Lost thistle is presumed extinct in California. In addition, the project area is outside this species elevation range. No Potential
Marin knotweed (<i>Polygonum marinense</i>)	3.1	Endemic to California. Found in Alameda, Humboldt, Marin, Napa, Solano, and Sonoma counties.	Marin knotweed is found in coastal salt or brackish water marshes and swamps. It occurs at elevations below 30 feet.	April – October	No CNDDDB occurrences for Marin knotweed have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential

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Marin western flax (<i>Hesperolinon congestum</i>)	FT CT 1B.1	Endemic to California. Found in Marin, San Francisco, and San Mateo counties.	Marin western flax occurs in serpentine soils in chaparral and valley and foothill grassland habitats. It occurs at elevations below 1,213 feet.	April – July	Five CNDDDB occurrences for Marin western flax have been documented within 5 miles of the project area, including near Crystal Springs Reservoir and Stulsaft Park. No serpentine soils are present in the project area; therefore, no suitable habitat for this species is present in the project area. No Potential
Methuselah’s beard lichen (<i>Usnea longissima</i>)	4.2	Found in numerous states including California. In California, found in Del Norte, Humboldt, Mendocino, Santa Cruz, San Mateo, and Sonoma counties.	Methuselah’s beard lichen is found on tree branches in broad-leaved upland forest and north coast coniferous forest habitats. It is usually found on old growth hardwoods and conifers. It occurs at elevations from approximately 260 to 4,800 feet.	Not Applicable	No CNDDDB occurrences for Methuselah’s beard lichen have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Montara manzanita (<i>Arctostaphylos montaraensis</i>)	1B.2	Endemic to San Mateo County.	Montara manzanita is found in maritime chaparral or coastal scrub habitats. It occurs at elevations from approximately 160 to 1,650 feet.	January – March	No CNDDDB occurrences for Montara manzanita have been documented within 5 miles of the project area. Suitable habitat for this species is present in the southern portion of the project area; however, no manzanita were observed during the January 2015 field visit. Low Potential

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Most beautiful jewel-flower (<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, Monterey, Santa Clara, and San Luis Obispo counties.	Most beautiful jewel-flower grows in serpentinite soils in chaparral, cismontane woodland, and valley and foothill grassland habitat. It occurs at elevations between 360 and 3,280 feet.	March – October	No CNDDDB occurrences for most beautiful jewel-flower have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Northern curly-leaved monardella (<i>Monardella sinuate</i> ssp. <i>nigrescens</i>)	1B.2	Endemic to California. Found in Monterey, Marin, and Santa Cruz counties. Thought to be extirpated from San Francisco County.	Northern curly-leaved monardella is found in sandy soils in chaparral, coastal dune, coastal scrub, and lower montane coniferous forest habitats. It occurs at elevations below 1,000 feet.	April – September	No CNDDDB occurrences for northern curly-leaved monardella have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Oregon polemonium (<i>Polemonium carneum</i>)	2B.2	Occurs in Oregon, Washington, and California. In California, found in northern California and in the San Francisco Bay Area.	Oregon polemonium grows in coastal prairie, coastal scrub, and lower montane coniferous forest. It occurs at elevations below 6,000 feet.	April – September	No CNDDDB occurrences for Oregon polemonium have been documented within 5 miles of the project area. Suitable habitat for this species is present in the southern portion of the project area. Low Potential
Ornduff's meadowfoam (<i>Limnanthes douglasii</i> ssp. <i>ornduffii</i>)	1B.1	Endemic to San Mateo County.	Ornduff's meadowfoam is found in meadows and seeps and agricultural fields. It occurs at elevations from 30 to 65 feet.	November – May	No CNDDDB occurrences for Ornduff's meadowfoam have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential

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Pacific manzanita (<i>Arctostaphylos pacifica</i>)	CE 1B.2	Known only from San Bruno Mountain in San Mateo County.	Pacific manzanita is found in chaparral and coastal scrub habitats. It is only known from San Bruno Mountain.	February – April	No CNDDDB occurrences for Pacific manzanita have been documented within 5 miles of the project area. Suitable habitat for this species is present in the southern portion of the project area; however, no manzanita were observed during the January 2015 field visit. Low Potential
Pappose tarplant (<i>Centromadia parryi</i> ssp. <i>parryi</i>)	1B.2	Endemic to California. Found in Butte, Colusa, Glenn, Lake, Napa, San Luis Obispo, San Mateo, Solano and Sonoma counties.	Pappose tarplant is found in chaparral, coastal prairie, meadows and seep, coastal salt marsh and swamp, and vernal mesic valley and foothill grassland habitats. It occurs at elevations from near sea level to approximately 1,370 feet.	May – November	No CNDDDB occurrences for pappose tarplant have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Point Reyes bird's-beak (<i>Chloropyron maritimum</i> ssp. <i>Palustre</i>)	1B.2	Endemic to California. Found in Humboldt, Marin, San Francisco, and Sonoma counties.	Point Reyes bird's-beak is found in coastal salt marshes and swamps. It occurs at elevations below 30 feet.	June – October	Two CNDDDB occurrences for Point Reyes bird's beak have been documented within 5 miles of the project area in the salt marshes in Redwood City and Belmont. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential

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Point Reyes horkelia (<i>Horkelia marinensis</i>)	1B.2	Endemic to California. Found in Marin, Mendocino, San Mateo, and Santa Cruz counties.	Point Reyes horkelia occurs in sandy soils in coastal dunes, coastal prairie, coastal strand, and northern coastal scrub habitats. It occurs at elevations from near sea level to approximately 2,480 feet.	May – September	No CNDDDB occurrences for Point Reyes horkelia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Presidio manzanita (<i>Arctostaphylos montana</i> ssp. <i>ravenii</i>)	FE CE 1B.1	Endemic to San Francisco County.	Presidio manzanita is found on serpentine outcrops in chaparral, coastal prairie, and coastal scrub habitats. It occurs at elevations from approximately 150 to 700 feet.	February – March	No CNDDDB occurrences for Presidio manzanita have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No manzanita were observed during the January 2014 site visit. No Potential
Robust spineflower (Chorizanthe robusta var. robusta)	FE 1B.1	Endemic to California. Found in Monterey, Marin, Santa Cruz, and San Francisco counties. Thought to be extirpated from San Mateo, Santa Clara, and Alameda counties.	Robust spineflower is found growing in sandy or gravelly soils in maritime chaparral, openings in cismontane woodland, coastal dunes, and coastal scrub habitats. It occurs at elevations from approximately sea level to 1,000 feet.	April – September	No CNDDDB occurrences for robust spineflower have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Rose leptosiphon (<i>Leptosiphon rosaceus</i>)	1B.1	Endemic to California. Found in San Mateo and Marin counties. Thought to be extirpated from San Francisco and Sonoma counties.	Rose leptosiphon is found in coastal bluff scrub habitats. It occurs at elevations from sea level to approximately 330 feet.	April – July	No CNDDDB occurrences for rose leptosiphon have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
Saline clover (<i>Trifolium hydrophilum</i>)	1B.2	Endemic to California. Found in Alameda, Colusa, Monterey, Napa, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma counties.	Saline clover occurs in marshes and swamps, mesic and alkaline valley and foothill grassland, and in vernal pool habitats. Many previously extant sites are thought likely to be extirpated. It occurs at elevations below 1,000 feet.	April – June	One CNDDDB occurrence for saline clover has been documented within 5 miles of the project area in Belmont. No suitable habitat for this species is present in the project area. No Potential
San Bruno Mountain manzanita (<i>Arctostaphylos imbricata</i>)	CE 1B.1	Endemic to San Mateo County.	San Bruno Mountain manzanita is only known from San Bruno Mountain. It is found in rocky soils in chaparral and coastal scrub habitats. It occurs at elevations from approximately 900 to 1,200 feet.	February – April	No CNDDDB occurrences for San Bruno Mountain manzanita have been documented within 5 miles of the project area. The project area is outside this species known range and elevation range. No Potential
San Francisco Bay spineflower (<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>)	1B.2	Endemic to California. Found in Marin, San Francisco, San Mateo, and Sonoma counties. Thought to be extirpated from Alameda County.	San Francisco Bay spineflower grows in sandy soils in coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub habitats. It occurs at elevations from near sea level to 700 feet.	April – August	No CNDDDB occurrences for San Francisco Bay spineflower have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
San Francisco campion (<i>Silene verecunda</i> ssp. <i>Verecunda</i>)	1B.2	Endemic to California. Found in Santa Cruz, San Francisco, San Mateo, and Sutter counties.	San Francisco campion is found in sandy soils in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland habitats. It occurs at elevations between 100 and 2,100 feet.	March – August	One CNDDDB occurrence for San Francisco campion has been documented within 5 miles of the project area at Edgewood County Park. However, the most recent occurrence was last documented in 1983. Low-quality suitable habitat for this species is present in the project area. Low Potential
San Francisco collinsia (<i>Collinsia multicolor</i>)	4.3	Endemic to California. Found in Monterey, Marin, Santa Clara, Santa Cruz, San Francisco, and San Mateo counties.	San Francisco collinsia is found in closed-cone coniferous forest and coastal scrub habitats, sometimes in serpentinite soils. It occurs at elevations from approximately 100 to 820 feet.	March – May	Two CNDDDB occurrences for San Francisco collinsia have been documented within 5 miles of the project area at Edgewood County Park and near the Crystal Springs Reservoir. Suitable habitat for this species is present in the project area. Moderate Potential
San Francisco gumplant (<i>Grindelia hirsutula</i> var. <i>maritima</i>)	3.2	Endemic to California. Found in Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, and Santa Cruz counties.	San Francisco gumplant occurs in sandy or serpentinite soils in coastal bluff scrub, coastal sage scrub, coastal scrub, northern coastal scrub, and valley and foothill grassland habitats. It occurs at elevations from approximately 50 to 1,300 feet.	June – September	No CNDDDB occurrences for San Francisco gumplant have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
San Francisco lessingia (<i>Lessingia germanorum</i>)	FE CE 1B.1	Endemic to California. Found in San Francisco and San Mateo counties.	San Francisco lessingia occurs on remnant dunes in coastal scrub and northern coastal scrub habitats. It occurs at elevations from approximately 80 to 360 feet.	June – November	No CNDDB occurrences San Francisco lessingia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
San Francisco owl's clover. (<i>Triphysaria floribunda</i>)	1B.2	Endemic to California. Found in Marin, San Mateo, and San Francisco counties.	San Francisco owl's clover usually occurs in serpentinite soils in coastal prairie, coastal scrub, and valley and foothill grassland habitat. It occurs at elevations from approximately 30 to 520 feet.	April – June	One CNDDB occurrence for San Francisco owl's clover has been documented within 5 miles of the project area. Low-quality suitable habitat for this species is present in the project area. Low Potential
San Mateo thorn-mint (<i>Acanthomintha ssp.duttonii</i>)	FE SE 1B.1	Endemic to San Mateo County.	San Mateo thorn-mint grows in serpentinite soils in valley and foothill grassland and chaparral habitats. It occurs at elevations between 160 and 980 feet.	April – June	Four CNDDB occurrences for San Mateo thorn-mint have been documented within 5 miles of the project area near Crystal Springs Reservoir and Edgewood County Park. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
San Mateo woolly sunflower (<i>Eriophyllum latilobum</i>)	FE CE 1B.1	Endemic to San Mateo County.	San Mateo woolly sunflower is found growing in cismontane woodland habitats often on serpentinite soils and on roadcuts. It is known from two extant occurrences. It occurs at elevations between 150 and 500 feet.	May – June	Two CNDDDB occurrences for San Mateo woolly sunflower have been documented within 5 miles of the project area near Crystal Springs Reservoir. No suitable habitat for this species is present in the project area. No Potential
Short-leaved evax (<i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>)	1B.2	Found in California and Oregon. In California, found in Del Norte, Humboldt, Mendocino, Marin, Santa Cruz, San Francisco, San Mateo, and Sonoma counties.	Short-leaved evax is found in sandy soils in coastal bluff scrub, coastal dunes, and coastal prairies. It occurs at elevations between sea level and 700 feet.	March - June	One CNDDDB occurrence for short-leaved evax has been documented within 5 miles of the project area near Black Mountain. No suitable habitat for this species is present in the project area. No Potential
Showy rancheria clover (<i>Trifolium amoenum</i>)	FE 1B.1	Endemic to California. Found in Marin, San Mateo, and Sonoma counties. Thought to be extirpated from Napa, Santa Clara, and Solano counties.	Showy rancheria clover is found in coastal bluff scrub and valley and foothill grassland habitats. It occurs at elevations from near sea level to approximately 1,360 feet.	April – June	No CNDDDB occurrences for showy rancheria clover have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
Slender-leaved pondweed (<i>Stuckenia filiformis</i>)	2B.2	Found in numerous states including California. In California, found in Alameda, Butte, Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Nevada, Placer, Shasta, Sierra, San Mateo, Solano, and Sonoma counties.	Slender-leaved pondweed grows in shallow freshwater marshes and swamps. It occurs at elevations between 980 and 7,000 feet.	May – June	No CNDDDB occurrences for slender-leaved pondweed have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. In addition, the project area is outside this species elevation range. No Potential
Water star-grass (<i>Heteranthera dubia</i>)	2B.2	Found in numerous states including California. In California, found in Butte, Colusa, Lassen, Mendocino, Modoc, Marin, San Francisco, Shasta, and San Mateo counties.	Water star grass is found alkaline marshes and swamps with still or slow-moving water. It requires a pH of 7 or higher and is usually found in slightly eutrophic waters. It occurs at elevations from approximately 100 to 4,900 feet.	July – October	No CNDDDB occurrences water star grass have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Western leatherwood (<i>Dirca occidentalis</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma counties.	Western leatherwood is found in mesic habitats including broad-leaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, and riparian forest and woodland. It occurs at elevations from approximately 80 to 1,400 feet.	January – April	Six CNNDDB occurrences for western leatherwood have been documented within 5 miles of the project area near Edgewood County Park, near Crystal Springs Reservoir, and Water Dog Lake Park. Suitable habitat for this species is present in coastal coyote brush scrub and live oak woodland habitat the project area. Moderate Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

Species Name	Federal, State, and CNPS Listing Status ¹	Geographic Distribution	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur ²
White-rayed pentachaeta (<i>Pentachaeta bellidiflora</i>)	FE CE 1B.1	Endemic to California. Found in San Mateo County. Thought to be extirpated from Marin and Santa Cruz counties.	White-rayed pentachaeta grows in cismontane woodland and valley and foothill grassland habitats and is often in serpentinite soils. It occurs at elevations between 100 to 2,000 feet.	March – May	Two CNDDDB occurrences for white-rayed pentachaeta have been documented within 5 miles of the project area; however, one of these occurrences was last documented in 1867. Because no serpentinite soils are present in the project area, only low to moderate-quality suitable habitat for this species is present in the project area. Low Potential
White seaside tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	1B.2	Endemic to California. Found in Mendocino, Marin, San Francisco, San Mateo, and Sonoma counties.	White seaside tarplant is found in valley and foothill grasslands, sometimes along roadsides. It occurs at elevations from approximately 65 to 1,840 feet.	April – November	No CNDDDB occurrences for white seaside tarplant have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Woodland woollythreads (<i>Monolopia gracilens</i>)	1B.2	Endemic to California. Found in Alameda, Contra Costa, Monterey, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, and San Mateo counties.	Woodland woollythreads grows in serpentine soils in openings in broad-leafed upland forests, openings in chaparral, cismontane woodlands, north coast coniferous forests, and valley foothill grassland habitats. It occurs at elevations between 330 and 4,000 feet.	February – July	Three CNDDDB occurrences for woodland woollythreads have been documented within 5 miles of the project area near Edgewood County Park, near Purisma Creek, and in San Carlos. No suitable habitat for woodland woollythreads is present in the project area. No Potential

Appendix C: Table 1. Special-Status Plant Species Potential to Occur in the Project Area

<p>¹ Status explanations:</p> <p>Federal: FE = Listed as endangered under the Federal Endangered Species Act. FT = Listed as threatened under the Federal Endangered Species Act.</p> <p>State: CE = Listed as endangered under the California Endangered Species Act. CT = Listed as threatened under the California Endangered Species Act. CR = Listed as rare in California.</p> <p>California Rare Plant Rank: Rank 1A = Presumed extinct in California; Rank 1B = Rare, threatened, or endangered in California and elsewhere; Rank 2A = Plants presumed extirpated in California, but more common elsewhere; Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere; Rank 3 = Plants for which more information is needed – A review list; and Rank 4 = Plants of limited distribution – A watch list.</p> <p>Additional threat ranks endangerment codes are assigned to each taxon or group as follows:</p> <ul style="list-style-type: none"> .1 = Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat). .2 = Fairly endangered in California (20-80% occurrences threatened). .3 = Not very endangered in California (<20% of occurrences threatened or no current threats known). 	<p>² Potential Occurrence explanations:</p> <p>Present: Species was observed on the project site, or recent species records (within five years) from literature are known within the project area.</p> <p>High: The CNDDDB or other reputable documents record the occurrence of the species off-site, but within a 5-mile radius of the project area and within the last 10 years. High-quality suitable habitat is present within the project area.</p> <p>Moderate: Species does not meet all terms of High or Low category. For example: CNDDDB or other reputable documents may record the occurrence of the species near but beyond a 5-mile radius of the project area, or some of the components representing suitable habitat are present within or adjacent to the project area, but the habitat is substantially degraded or fragmented.</p> <p>Low: The CNDDDB or other documents may or may not record the occurrence of the species within a 5-mile radius of the project area. However, few components of suitable habitat are present within or adjacent to the project area.</p> <p>No: CNDDDB or other documents do not record the occurrence of the species within or reasonably near the project area and within the last 10 years, and no or extremely few components of suitable habitat are present within or adjacent to the project area; or site is outside of specie’s range.</p>
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Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Invertebrates				
Bay checkerspot butterfly (<i>Euphydryas editha bayensis</i>)	FT	Restricted to native grasslands on outcrops of serpentine soil Santa Clara and San Mateo Counties, California.	Bay checkerspot butterfly is found in shallow, serpentine-derived soils in native grasslands supporting larval host plants, including dwarf plantain (<i>Plantago erecta</i>) or purple owl's clover (<i>Castilleja densiflora</i> or <i>Castilleja exserta</i>).	Four CNDDDB occurrences for Bay checkerspot butterfly have been documented within 5 miles of the project area at Pulgas Ridge near Hillsborough, in Redwood City, at Edgewood County Park, and near the intersection of Interstate 280 and Highway 92 east of Crystal Springs Reservoir. No suitable habitat for this species is present in the project area. No Potential
Bumblebee scarab beetle (<i>Lichnanthe ursina</i>)	SA	Found from Sonoma County south to San Mateo County.	Bumblebee scarab beetle is found in sand dunes. It usually flies close to the sand surface near the crest of dunes.	No CNDDDB occurrences for bumblebee scarab beetle have been documented within 5 miles of the project area. No suitable habitat this species is present in the project area. No Potential
Callippe silverspot (<i>Speyeria callippe callippe</i>)	FE	The vast majority of habitat lies within the cities of San Francisco, Oakland, and Berkeley. Also occurs in areas of San Mateo County, including San Bruno Mountain, and Alameda County.	Callippe silverspot butterfly is found in native grassland and adjacent habitat. Females lay their eggs on the dry remains of the larval host plant Johnny jump-up (<i>Viola pedunculata</i>). Most adults are found on east-facing slopes. During the breeding season (mid-May to late July) males congregate on hilltops in search of females.	No CNDDDB occurrences for Callippe silverspot butterfly have been documented within 5 miles of the project area. No suitable habitat this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Edgewood blind harvestman (<i>Calicina minor</i>)	SA	Historically found near the Crystal Springs Reservoir in San Mateo County. Currently only known from Edgewood Park.	Edgewood blind harvestman is restricted to serpentine grasslands. It is found on the undersides of serpentine rocks in moist areas.	Two CNDDB occurrences for Edgewood blind harvestman have been documented within 5 miles of the project area in the Edgewood Park area and near the Crystal Springs Dam. No suitable habitat for this species is present in the project area. No Potential
Edgewood micro-blind harvestman (<i>Microcina edgewoodensis</i>)	SA	Only known from Edgewood Park.	Edgewood micro-blind harvestman is found in open grassland habitats in xeric environments. It is often found beneath serpentine rocks in grassland adjacent to scrub oaks.	One CNDDB occurrence for Edgewood micro-blind harvestman has been documented within 5 miles of the project area in Edgewood Park. No suitable habitat for this species is present in the project area. No Potential
Incredible harvestman (<i>Banksula incredula</i>)	SA	Known only from San Bruno Mountain in San Mateo County.	Incredible harvestman is found on San Bruno Mountain on a trailside talus slope consisting of Franciscan sandstone with a dense chaparral canopy.	No CNDDB occurrences for incredible harvestman have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Leech's skyline diving beetle (<i>Hydroporus leechi</i>)	SA	Little information is available on distribution. Found in San Mateo County.	Little information is available on Leech's skyline diving beetle habitat. It is known to inhabit freshwater ponds.	No CNDDB occurrences for Leech's skyline diving beetle have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Mimic tryonia (<i>Tryonia imitator</i>)	SA	Found in Sonoma County south to San Diego County.	Mimic tryonia is a snail found in brackish salt marshes. It inhabits coastal lagoons, estuaries and salt marshes where it lives in permanently flooded areas. It is able to withstand a wide range of salinities.	No CNDDDB occurrences for mimic tryonia have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Mission blue butterfly (<i>Plebejus icarioides missionensis</i>)	FE	Found in only a few locations in the San Francisco Bay Area, including the Marin Headlands in Marin County, skyline ridges and San Bruno Mountain in San Mateo County, and Twin Peaks in San Francisco County.	Mission blue butterfly requires a host plant and the appropriate nectar plants in coastal grassland habitat. Host plants include silver lupine (<i>Lupinus albifrons</i>), varicolor lupine (<i>L. variicolor</i>), and summer lupine (<i>L. formosus</i>). Nectar plants include various composite flowers in the sunflower family (<i>Asteraceae</i>) that grow in association with the larval host plants.	No CNDDDB occurrence for mission blue butterfly have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Monarch butterfly (<i>Danaus plexippus</i>)	SA	Winter roost sites extend along the coast from northern Mendocino County to Baja California, Mexico.	Monarch butterfly roosts in wind-protected Eucalyptus (<i>Eucalyptus</i> sp.), Monterey pine (<i>Pinus radiata</i>), and Monterey cypress (<i>Cupressus macrocarpa</i>) tree groves with nectar and water sources nearby.	Numerous CNDDDB occurrences for monarch butterfly have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Myrtle's silverspot (<i>Speyeria zerene myrtleae</i>)	FE	Currently only found in northwestern Marin County, including Point Reyes National Seashore, and southwestern Sonoma County.	Myrtle's silverspot is coastal dune or prairie habitat. Females lay their eggs on the debris and dried stems of hooked spur violet (<i>Viola adunca</i>). Adult butterflies are typically found in areas that are sheltered from wind below 810 feet in elevation and within 3 miles of the coast. Adult flight season ranges from late June to early September. Adults feed on nectar from flowers, including hairy gumweed (<i>Grindelia hirsutula</i>), coastal sand verbena (<i>Abronia latifolia</i>), mints (<i>Monardella</i> spp.), bull thistle (<i>Cirsium vulgare</i>), and seaside fleabane (<i>Erigeron glaucus</i>).	One CNDDDB occurrence for Myrtle's silverspot has been documented in the vicinity of the Town of San Mateo; however, this occurrence was documented in 1919 and it is thought this occurrence may have been observed in Pacifica. No suitable habitat for this species is present in the project area. In addition, this species is extirpated from San Mateo County. No Potential
Opler's longhorn moth (<i>Adela operella</i>)	SA	Occurs along the west side of the San Francisco Bay in Alameda, Marin, Sonoma, Santa Cruz, and Santa Clara counties and in the inner Coast Ranges.	The Opler's longhorn moth is found in grasslands where its larval food plant cream cups (<i>Platystemon californicus</i>) grows. It prefers habitats with serpentine soils.	No CNDDDB occurrences for Opler's longhorn moth have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	SA	Known only from the San Francisco Bay area.	Ricksecker's water scavenger beetle is a small aquatic beetle known only from pond habitats scattered around the San Francisco Bay area. It inhabits slow moving freshwater ponds, streams, marshes, and lakes. Where and if any populations of this species still exist is unknown.	Two CNDDDB occurrence for Ricksecker's water scavenger beetle have been documented within 5 miles of the project area. However, the last known occurrence was documented in 1950. No suitable aquatic habitat is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
San Bruno elfin butterfly (<i>Callophrys mossii bayensis</i>)	FE	Found in only three locations around the San Francisco Bay Area, including Milagra Ridge, San Bruno Mountain, and Montara Mountain in San Mateo County.	San Bruno elfin butterfly occurs only on north-facing slopes within the fogbelt where its host plant stonecrop (<i>Sedum spathulifolium</i>) grows. Stoncrop grows in coastal grassland and low scrub on thin, rocky soils.	No CNDDDB occurrences for San Bruno elfin butterfly have been documented within 5 miles of the project area. No suitable habitat is for this species present in the project area. No Potential
Sandy beach tiger beetle (<i>Cicindela hirticollis gravida</i>)	SA	Found along the coast of California from the San Francisco Bay to northern Mexico.	Sandy beach tiger beetle is found in areas adjacent to non-brackish water.	No CNDDDB occurrences for sandy beach tiger beetle have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
San Francisco forktail damselfly (<i>Ischnura gemina</i>)	SA	Endemic to the San Francisco Bay area.	San Francisco forktail damselfly is found in small, marshy ponds and ditches with emergent and floating aquatic vegetation.	No CNDDDB occurrences for San Francisco forktail damselfly have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
San Francisco Bay Area leaf-cutter bee (<i>Trachusa gummifera</i>)	SA	Endemic to the San Francisco Bay area.	Known from two collections made in 1957 and 1962. No specific habitat information is available. Leaf-cutting bees use cut leaves to construct nests in cavities (mostly in rotting wood). They create multiple cells in the nest, each with a single larva and pollen stored for the larvae to eat. Leaf-cutting bees are important pollinators of wildflowers, fruits, vegetables and other crops.	No CNDDDB occurrences San Francisco Bay leaf-cutter bee have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Stage's dufourine bee (<i>Dufourea stagei</i>)	SA	Range extends from San Bruno Mountain south to the Santa Cruz Mountains area	Stage's dufourine bee is a ground nesting bee. It is known from a single collection made in 1962.	No CNDDDB occurrences Stage's dufourine bee have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Tomales isopod (<i>Caecidotea tomalensis</i>)	SA	Found in several localities from Sonoma to San Mateo counties.	Tomales isopod prefers practically still to slow-moving, vegetated water, such as spring fed ponds.	No CNDDDB occurrences for Tomales isopod have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Fish				
Hardhead (<i>Mylopharodon conocephalus</i>)	CSSC	Found in streams at low to mid elevations in the Sacramento-San Joaquin River and Russian River drainages. Also present in the Napa River although the population is very restricted in its distribution in this river.	Hardhead are found at low to mid elevations in relatively undisturbed habitats of larger streams with clear, cool waters. Prefer pools and runs with deep (greater than 80 centimeters) clear water, slow velocities, and sand-gravel-boulder substrates.	No CNDDDB occurrences for hardhead have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC CT CSSC	Found in nearshore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon Border. Specifically, found in the Sacramento-San Joaquin Delta, San Pablo Bay, San Francisco Bay, the Gulf of Farallones, the Humboldt Bay, and the Eel River estuary.	Longfin smelt is found in open waters of estuaries, mostly in the middle or bottom of the water column. It prefers salinities of 15 to 30 parts per thousand, but it can be found in completely freshwater to almost pure saltwater.	One CNDDDB occurrence for longfin smelt has been documented within 5 miles of the project area in the San Francisco Bay. No suitable habitat for this species is present in the project area. No Potential
Steelhead (Central California coast Distinct Population Segment [DPS]) (<i>Oncorhynchus mykiss irideus</i>)	FT	This DPS includes all populations of steelhead from the Russian River south to Aptos Creek. Steelhead in drainages of San Francisco, San Pablo, and Suisun Bays are also part of this DPS.	Adult steelhead migrate from the ocean into streams in the late fall, winter, or early spring seeking out deep pools within fast moving water to rest prior to spawning. Steelhead spawn in shallow-water gravel beds.	One CNDDDB occurrence for steelhead has been documented within 5 miles of the project area at Mills Creek in the Burleigh H. Murray Ranch State Park. No suitable habitat for this species is present in the project area. No Potential
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE CSSC	Found in scattered locations from the mouth of the Smith River in Del Norte County to Agua Hedionda Lagoon in northern San Diego County.	Tidewater goby inhabits brackish shallow lagoons and lower stream reaches where the water is fairly still, but not stagnant. It prefers a sand substrate component for breeding, but is also found on rocky, mud, and silt substrates. Tidewater goby is found in waters with salinity levels between 2 and 27 parts per thousand.	No CNDDDB occurrences for tidewater goby have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Amphibians				
California red-legged frog (<i>Rana draytonii</i>)	FT CSSC	Found from Riverside County to Mendocino County along the Coast Range, from Calaveras County to Butte County in the Sierra Nevada, and in Baja California.	California red-legged frog is found in lowlands and foothills in or near permanent sources of deep water. It prefers shorelines with extensive vegetation since it disperses far during and after rain. Larvae require 11-12 weeks of permanent water for development.	<p>Approximately 20 CNDDB occurrences for California red-legged frog have been documented within 5 miles of the project area, including, but not limited to, Albert Canyon Creek, locations surrounding the Crystal Springs Reservoir, Stone Dam Reservoir, and in San Mateo Creek. No suitable habitat aquatic breeding habitat for this species is present in the project area; however, low-quality breeding habitat is present in Water Dog Lake which is approximately 300 feet from the project area. Marginally suitable dispersal habitat is present in the intermittent creeks near project area. However, due to the urban nature of the project area, the presence of paved parking areas, and the presence of unsuitable coastal coyote brush habitat, California red-legged frog is unlikely to disperse through the area.</p> <p>Low Potential</p>

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
California tiger salamander (<i>Ambystoma californiense</i>)	FT CT CSSC	Found in the Coast Range and Sierra Nevada foothills of California. In the Coast Range, it occurs from southern San Mateo County south to central San Luis Obispo County, and also in the vicinity of northwestern Santa Barbara County. In the Sierra Nevada foothills, it occurs from northern Yolo County to northwestern Kern County and northern Tulare County.	California tiger salamander are found in grasslands and open oak woodlands. Necessary habitat components for this species include California ground squirrel (<i>Otospermophilus beecheyi</i>) or gopher burrows for underground retreats and breeding ponds, such as seasonal wetlands, vernal pools, or slow moving streams that do not support predatory fish or frog populations.	No CNDDDB occurrences for California tiger salamander have been documented within 5 miles of the project area. No suitable habitat aquatic breeding habitat for this species is present in the project area; however, low-quality breeding habitat is present in Water Dog Lake which is approximately 300 feet from the project area. No suitable upland aestivation habitat is present in the project area. In addition, due to the urban nature of the project area and the presence of paved parking areas California tiger salamander is unlikely to disperse through the area. Low Potential
Reptiles				
Western pond turtle (<i>Emys marmorata</i>)	CSSC	Found from Baja California, Mexico north through Klickitat County, Washington. In California, found west of the Sierra-Cascade crest. Absent from desert regions, except the Mojave Desert along the Mojave River and its tributaries.	Western pond turtle requires permanent or nearly permanent bodies of water including ponds, marshes, rivers, streams, and irrigation ditches. It requires basking sites, such as submerged rocks, logs, open mud banks, or floating vegetation mats. This species also requires sandy banks or grassy open fields up to 0.5 kilometers from the water's edge for egg laying.	Ten CNDDDB occurrences for western pond turtle have been documented within 5 miles of the project area, including areas surrounding Crystal Springs Reservoir and in San Mateo Creek. No suitable aquatic habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
San Francisco garter snake <i>(Thamnophis sirtalis tetrataenia)</i>	FE CE	Historically, occurred in scattered wetland areas on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains. Found at least from the Upper Crystal Springs Reservoir in San Mateo County south to Año Nuevo State Reserve in Santa Cruz County. Currently, although the geographical distribution may remain the same, reliable information regarding specific locations and population status is not available. Much of the remaining suitable habitat is located on private property that has not been surveyed for the presence of the snake.	San Francisco garter snake is a highly aquatic species that is found in or near densely vegetated freshwater ponds with adjacent open hillsides where they can bask, feed, and find cover in rodent burrows.	Numerous CNDDB occurrence for San Francisco garter snake are have been documented within 5 miles of the project area; however, many of these locations are within the vicinity of the Crystal Springs Reservoir. No suitable aquatic habitat for San Francisco garter snake is present in the project area. Only marginally suitable dispersal habitat is present in the project area due to the urban nature of the area. Low Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Birds				
Alameda song sparrow <i>(Melospiza melodia pusillula)</i>	CSSC	Restricted to the tidal marshes on the fringes of the south San Francisco Bay.	Alameda song sparrow is a resident of salt marshes bordering the south arm of the San Francisco Bay. It prefers tidally influenced habitats. This species is found in all relatively large marshes (e.g., Dumbarton Marsh, Palo Alto Baylands) and in most remnant patches of marsh vegetation along sloughs, dikes, and levees, including some highly disturbed and urbanized sites. Vegetation is required for nesting sites, song perches, and concealment from predators. In addition, Alameda song sparrow requires some upper marsh vegetation for nesting in order to ensure the nests remain dry during high tide.	Five CNDDDB occurrences for Alameda song sparrow have been documented within 5 miles of the project area near the San Francisco Bay in San Mateo and Belmont. No suitable habitat for this species is present in the project area. No Potential
American peregrine falcon <i>(Falco peregrinus anatum)</i>	CFP	Occurs throughout the Central Valley, coastal areas, and northern mountains of California.	American peregrine falcon uses steep cliffs and buildings for nesting. It forages over a variety of habitats, especially wetlands.	One CNDDDB occurrence for American peregrine falcon has been documented within 5 miles of the project area near the Oracle Campus in Redwood City. No suitable nesting habitat for this species is present in the project area. Suitable foraging habitat is present within the vicinity of the project area; therefore, peregrine falcon may fly through the project area. Low Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Bank swallow (<i>Riparia riparia</i>)	CT	Occurs in scattered locations in northern and central California in major lowland valleys and coastal areas where alluvial soils exist. The major breeding population is confined to the Sacramento and Feather Rivers and their major tributaries.	Bank swallow is a colonial nester and requires vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. Nest sites consist of burrows dug into a vertical earthen bank to a depth of 18 to 36 inches.	No CNDDDB occurrences for bank swallow have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Black-crowned night heron (<i>Nycticorax nycticorax</i>)	SA	Occurs throughout the lowlands and foothills of California. Seldom observed in the mountains.	Black-crowned night heron feeds along the margins of lacustrine, large riverine, and fresh and saline emergent habitats and, rarely, on kelp beds in marine subtidal habitats. It nests and roosts in dense-foliaged trees and dense emergent wetlands.	No CNDDDB occurrences for black-crowned night heron have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No evidence of nesting or roosting was observed during the January site visit. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Black skimmer <i>(Rynchops niger)</i>	CSSC	Breeds primarily in coastal southern California and the Salton Sea, can be found breeding along the coast from the San Francisco Bay to south San Diego Bay. Winters from southern California to Baja California and the Gulf of California.	Black skimmer is a highly colonial waterbird that requires large areas of bare earth that are sufficiently isolated from terrestrial predators and other disturbances for nesting. Nesting colonies most often form on small constructed islands or on isolated sections of eroded levees. In winter, this species commonly roosts on urban beaches well above the tide line or on mud flats in estuaries. Beach sites that are commonly used by skimmers are associated with estuaries or protected harbors or are near the mouths of rivers or other drainage channels.	No CNDDDB occurrences for black skimmer have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Burrowing owl <i>(Athene cunicularia)</i>	CSSC	Found year-round throughout much of California, except the coastal counties north of Marin and mountainous areas.	Burrowing owl is found in open, dry annual grasslands and scrublands characterized by low-growing vegetation. It is dependent upon burrowing mammals, especially the California ground squirrel for nesting and wintering sites.	One CNDDDB occurrence for burrowing owl has been documented within 5 miles of the project area in the San Mateo Shoreline Park. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	CT	The majority found in the tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays. Smaller populations occur in San Francisco Bay, the Outer Coast of Marin County, freshwater marshes in the foothills of the Sierra Nevada, and in the Colorado River Area.	California black rail is found in marshlands with unrestricted tidal influence (estuarine, intertidal, emergent, or regularly flooded). It prefers areas dominated by pickleweed (<i>Salicornia virginica</i>), bulrushes (<i>Scirpus</i> sp.), matted salt grass (<i>Distichlis spicata</i>), and other marsh vegetation.	One CNDDB occurrence for California black rail has been documented within 5 miles of the project area in Belmont Slough. No suitable habitat for this species is present in the project area. No Potential
California clapper rail (<i>Rallus longirostris obsoletus</i>)	FT CT	Found almost exclusively in the marshes of the San Francisco estuary in San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin counties.	California clapper rail is found in tidal saltwater and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. It prefers tall stands of pickleweed and pacific cordgrass (<i>Spartina foliosa</i>), but they are also associated with gumplant (<i>Grindelia</i> sp.), saltgrass (<i>Distichlis spicata</i>), and alkali heath (<i>Frankenia grandifolia</i>).	Four CNDDB occurrences for California clapper rail have been documented within 5 miles of the project area at the mouth of Seal Slough northwest of Foster City, in the marshes bordering Smith Slough, near Coyote Point, and in the marshes bordering Belmont Slough south of Foster City. No suitable habitat for this species is present in the project area. No Potential
California least tern (<i>Sternula antillarum browni</i>)	FE CE	Nests along the coast from San Francisco Bay south to Northern Baja California.	California least tern forages primarily in shallow estuaries or lagoons where small fish are abundant. It nests in loose colonies in areas relatively free of human or predatory disturbance on bare or sparsely vegetated, flat substrates in sand beach, alkali flat, or landfill habitats near shallow-water feeding areas.	One CNDDB occurrence for California least tern has been documented within 5 miles of the project area in the San Francisco Bay near Bair Island. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Cooper's hawk (<i>Accipiter cooperii</i>)	SA	Breeds throughout the contiguous 48 United States, southern Canada, and northern Mexico. In California it breeds throughout most of the wooded portion of the state.	Cooper's hawk breeds in deciduous, mixed, and coniferous forests near water. During migration, it uses a mixture of habitat types with vegetative cover, often hunting on the edges of wooded areas.	No CNDDB occurrences for Cooper's hawk have been documented within 5 miles of the project area. Suitable habitat for this species is present in the project area. Low Potential
Double-crested cormorant (<i>Phalacrocorax auritus</i>)	SA	Found along the entire coast of California. Uncommon in marine subtidal habitats from San Luis Obispo County south and very rare in the north.	Double-crested cormorants occur on inland lakes, and in fresh, salt, and estuarine waters. It nests on rock ledges on cliffs, rugged slopes, and live or dead trees beside water on islands or the mainland.	One CNDDB occurrence for double-crested cormorant has been documented within 5 miles of the project area near Steinberger Slough near Bair Island. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Great blue heron (<i>Ardea herodias</i>)	SA	Found throughout California. Less common in the mountains and above the foothills.	Great blue heron is a colonial nester in shallow estuary systems and fresh and saline emergent wetlands. It forages in a variety of habitats including rocky shores, coastal lagoons, saltwater and freshwater marshes, mudflats, bays, estuaries, along the margins of rivers, lakes, and irrigation canals, and in flooded fields. It often roosts on the ground during the day and above ground in secluded tall trees at night. Nesting colonies are typically found in groves of large trees, often in the highest branches. Its preferred nesting habitat is free of human disturbance and mammalian predators and near good foraging areas. It often nests in mixed colonies with other herons, egrets, and cormorants.	One CNDDB occurrence for great blue heron has been documented within 5 miles of the project area near Steinberger Slough near Bair Island. No suitable habitat for this species is present in the project area. No evidence of nesting or roosting was observed during the January site visit. No Potential
Merlin (<i>Falco columbarius</i>)	SA	Found wintering in California. Does not breed in California. Mostly found in the western half of California below 3,900 feet.	Merlin winters in tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms, and ranches. Clumps of trees or windbreaks are required for roosting in open country.	No CNDDB occurrences for merlin have been documented within 5 miles of the project area. No suitable habitat for merlin is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Northern harrier (<i>Circus cyaneus</i>)	CSSC	Breed from sea level near the coast to at least 9,000 feet in the Glass Mountain region of Mono County.	Northern harrier is predominantly found in grassland and wetland communities; however, it uses various habitats. It nests on the ground in shrubby vegetation, usually at marsh edges.	One CNDDDB occurrence for northern harrier has been documented within 5 miles of the project area near Bair Island in the San Francisco Bay. No suitable habitat for this species is present in the project area. No Potential
Saltmarsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	CSSC	Found year-round in the vicinity of San Francisco Bay, from Tomales Bay in Marin County and Napa Sloughs in southern Sonoma County on the north, east to Carquinez Straight, and south to vicinity of San Jose in Santa Clara County. Historic locations of confirmed breeding include Lake Merced in San Francisco County, and Coyote Creek, Alviso, and Milpitas in Santa Clara County	Saltmarsh common yellowthroat nests and forages in fresh and saltwater marshes and seasonal wetlands. It breeds on the ground or up to 8 centimeters off the ground under the cover of dense shrubs and emergent aquatic vegetation.	Three CNDDDB occurrences for saltmarsh common yellowthroat have been documented within 5 miles of the project area in the Upper Crystal Springs Reservoir; however, these were last documented in 1985. No suitable nesting or foraging habitat for this species is present in the project area. Suitable foraging and breeding habitat is present in the San Francisco Bay and in the Crystal Springs Reservoir east and west of the project area, respectively; therefore, some individuals could fly through the project area. Low Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Short-eared owl (<i>Asio flammeus</i>)	CSSC	Found year-round in certain parts of California. Small resident populations remain in the Great Basin region and locally in the Sacramento–San Joaquin River Delta. Most recent breeding from coastal central California and the San Joaquin Valley has been episodic. Breeding in mainland southern California is exceptional and limited to years of unusual incursions.	Short-eared owl forages in in open, treeless areas, such as marshes and grasslands, with elevated sites for perches and dense vegetation for roosting and nesting.	One CNDDDB occurrence for short-eared owl has been documented within 5 miles of the project area near Bair Island. No suitable habitat for short-eared owl is present in the project area. No Potential
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT CSSC	Occurs along the entire coastline of California.	Western snowy plover is found on sandy beaches, salt pond levees, and shores of large alkali lakes. It needs sandy, gravelly, or friable soils for nesting.	Three CNDDDB occurrence for western snowy plover have been documented within 5 miles of the project area near Belmont and Bair Island in the San Francisco Bay. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
White-tailed kite (<i>Elanus leucurus</i>)	CFP	Found year-round in nearly all areas of California up to the western Sierra Nevada foothills and southeast deserts. Common in the Central Valley of California and along the entire length of the coast, possibly breeding in more arid regions east of the Sierra Nevada and Transverse Range (Inyo and eastern Kern Counties). Documented breeding in Imperial County, western Riverside County, and eastern San Diego County. In the Sacramento Valley, populations have predominantly increased in irrigated agricultural areas where the California vole (<i>Microtus californicus</i>) often occurs.	White-tailed kite nests in rolling foothills or valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. It forages in open grasslands, meadows, or marshes with perching sites.	No CNDDDB occurrences for white-tailed kite have been documented within 5 miles of the project area. Low-quality nesting habitat for this species is present in the project area. No suitable foraging habitat is present in the project area; however, suitable foraging habitat is present nearby. The quality of the nesting habitat is low due to the urban nature of the project area. In addition, suitable foraging and breeding habitat is present in the vicinity of the project area; therefore, some individuals could fly through the project area. Low Potential
Mammals				
Alameda Island mole (<i>Scapanus latimanus parvus</i>)	CSSC	Found only on Alameda Island in the San Francisco Bay.	Alameda Island mole is found in a variety of habitats, but prefers annual and perennial grasslands with moist friable soils. This species avoids flooded soils.	No CNDDDB occurrences for Alameda Island mole have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. In addition, this species is not known to occur in the vicinity of the project. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
American badger (<i>Taxidea taxus</i>)	CSSC	Occurs throughout California, the western United States, and Canada.	American badger is rare in western San Francisco Bay area. It occurs in grasslands and open stages of forest and scrub habitats with friable soils and good prey base of burrowing rodents.	No CNDDDB occurrences for American badger have been documented within 5 miles of the project area. No suitable habitat for this species is present in the project area. No Potential
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	CSSC	Rare in California. Found only in low lying arid areas of southern California and as a vagrant elsewhere.	Big free-tailed bat needs high cliffs or rocky outcrops for roosting. This species prefers rugged, rocky canyons. It feeds principally on large moths.	No CNDDDB occurrences habitat for big free-tailed bat have been documented within 5 miles of the project area. No suitable for this species is present in the project area. No Potential
Hoary bat (<i>Lasiurus cinereus</i>)	SA	Found throughout California, although distribution is patchy in the southeastern deserts.	Hoary bat prefers open habitats or habitat mosaics, with access to trees for cover. It prefers open areas or habitat edges for feeding. It roosts in dense foliage of medium to large trees. It requires water nearby foraging and roosting sites.	Three CNDDDB occurrences for hoary bat have been documented within 5 miles of the project area in Hillsborough, San Mateo, and Redwood City. Suitable habitat for this species is present in the project area. Moderate Potential
Fringed myotis (<i>Myotis thysanodes</i>)	SA	Occurs throughout California.	Occurs in a wide variety of habitats ranging in elevation from sea level to 9,350 feet. Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer. It roosts in caves, mines, buildings, and crevices.	No CNDDDB occurrences for fringed myotis have been documented within 5 miles of the project area. Due to the urban nature of the project area, only low-quality suitable habitat is present in the project area. Low Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
Pallid bat (<i>Antrozous pallidus</i>)	CSSC	Common throughout low elevations of California. No found in the high Sierra from Shasta to Kern counties and the northwestern corner of the State from Del Norte and western Siskiyou counties to northern Mendocino County.	Pallid bat is uncommon, especially in urban areas. This species roosts in caves and large trees and forages in grasslands and oak savannah. It is most common in open, dry habitats with rocky areas for roosting.	One CNDDB occurrence for pallid bat has been documented within 5 miles of the project area in Belmont. However, this occurrence was last recorded in 1952. Some trees are present in the project area that could provide roosting habitat for pallid bat; however, this habitat is marginal since it is fairly urban. Low Potential
Saltmarsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE CE	Occurs only in the saline emergent wetlands of the San Francisco Bay and its tributaries.	Saltmarsh harvest mouse is only found in saline emergent wetlands in the San Francisco Bay and its tributaries. It uses pickleweed as its primary cover. It also uses non-submerged, salt-tolerant vegetation for escape during extremely high tides.	Two CNDDB occurrences for saltmarsh harvest mouse have been documented within 5 miles of the project area near Oneill Slough in Foster City and Bair Island between Steinberger Slough and Redwood Creek. No suitable habitat for this species is present in the project area. No Potential
Saltmarsh wandering shrew (<i>Sorex vagrans halicoetes</i>)	CSSC	Endemic to the salt marshes of the south arm of the San Francisco Bay in San Mateo, Santa Clara, Alameda, and Contra Costa counties.	Saltmarsh wandering shrew is most frequently found in salt marshes that provide dense cover and have abundant sources of invertebrates for food and continuous ground moisture.	One CNDDB occurrence for saltmarsh wandering shrew has been documented within 5 miles of the project area near Bair Island. No suitable habitat for this species is present in the project area. No Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
San Francisco dusky-footed woodrat (<i>Neotoma fuscipes annectens</i>)	CSSC	Found throughout the San Francisco Bay area in grasslands, scrub and wooded areas.	San Francisco dusky-footed woodrat is found in forest and scrub habitats of moderate canopy and moderate dense understory.	One CNDDDB occurrence for San Francisco dusky-footed woodrat has been documented within 5 miles of the project area near the Crystal Springs Reservoir. Suitable habitat for this species is present in the coastal coyote brush scrub and oak woodland habitat in the project area. Woodrat houses were observed during the January site visit. Present
Santa Cruz kangaroo rat (<i>Dipodomys venustus venustus</i>)	SA	Found in the cool, maritime mountains of west-central California.	Santa Cruz kangaroo rat occurs in chaparral habitats in the low foothills of the Santa Cruz Mountains on substrates of sands, loams, and sandy loams.	One CNDDDB occurrence for Santa Cruz kangaroo rat has been documented within 5 miles of the project area in Redwood City. No suitable habitat for this species is present in the project area. No Potential
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	CPT CSSC	Found throughout California, but details of its distribution are not well known. Found in all but subalpine and alpine habitats.	Townsend's big-eared bat roosts in caves, mines, and large trees. It forages within woodlands and along stream edges. This species is extremely sensitive to human disturbance.	No CNDDDB occurrences for Townsend's big-eared bat have been documented within 5 miles of the project area. Some low-quality roosting habitat for this species is present in the project area given the urban nature of the area. Low Potential

Appendix C: Table 2. Special-Status Wildlife Species Potential to Occur in the Project Area

Species Name	Federal and State Listing Status ¹	Geographic Distribution	Habitat Requirements	Potential to Occur ²
<p>¹ Status explanations:</p> <p>Federal: FE = Listed as endangered under the Federal Endangered Species Act. FT = Listed as threatened under the Federal Endangered Species Act. FC = Candidate species to be listed under the Federal Endangered Species Act.</p> <p>State: CE = Listed as endangered under the California Endangered Species Act. CT = Listed as threatened under the California Endangered Species Act. CPT = Proposed as threatened under the California Endangered Species Act. CSSC = Species of Special Concern designated by California Department of Fish and Wildlife. CFP = Fully Protected Species under California Fish and Game Code. SA = Listed in California as a special animal.</p>		<p>² Potential Occurrence explanations:</p> <p>Present: Species was observed on the project site, or recent species records (within five years) from literature are known within the project area.</p> <p>High: The CNDDDB or other reputable documents record the occurrence of the species off-site, but within a 10-mile radius of the project area and within the last 10 years. High-quality suitable habitat is present within the project area.</p> <p>Moderate: Species does not meet all terms of High or Low category. For example: CNDDDB or other reputable documents may record the occurrence of the species near but beyond a 10-mile radius of the project area, or some of the components representing suitable habitat are present within or adjacent to the project area, but the habitat is substantially degraded or fragmented.</p> <p>Low: The CNDDDB or other documents may or may not record the occurrence of the species within a 10-mile radius of the project area. However, few components of suitable habitat are present within or adjacent to the project area.</p> <p>No: CNDDDB or other documents do not record the occurrence of the species within or reasonably near the project area and within the last 10 years, and no or extremely few components of suitable habitat are present within or adjacent to the project area.</p>		



Photo 1: Representative photograph of developed habitat with intermittent ornamental vegetation, facing north.



Photo 2: Representative photograph of coast live oak woodland habitat in the southern portion of the project site, facing south.

Title: Site Photographs – Belmont Crystal Springs School

Date: January 2015

Site: Belmont, California





Photo 3: Representative photograph of coastal coyote brush habitat with coast live oak woodland in the background in the southern portion of the project site, facing southeast.



Photo 4: Willow thicket habitat in the southwest portion of the project site, facing southwest.

Title: Site Photographs – Belmont Crystal Springs School

Date: January 2015

Site: Belmont, California





Photo 5: Representative photograph of disturbed coastal coyote brush habitat in the northwest project site, facing south.



Photo 6: Manipulated intermittent creek in coast live oak woodland habitat in the southwest portion of the project site, facing south.

Title: Site Photographs – Belmont Crystal Springs School

Date: January 2015

Site: Belmont, California





Photo 7: Potential San Francisco dusky-footed woodrat house in the coastal coyote brush scrub habitat in the southern portion of the project site.



Photo 8: Potential San Francisco dusky-footed woodrat house in the coast live oak woodland habitat in the western portion of the project site.

Title: Site Photographs – Belmont Crystal Springs School

Date: January 2015

Site: Belmont, California

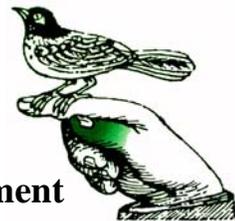


The City of Belmont, California
Crystal Springs Uplands School
Preliminary Arborist Tree Assessment Report

31 October 2011

Ralph Osterling Consultants

Natural & Urban Resources Management



PRELIMINARY ARBORIST TREE ASSESSMENT REPORT

Crystal Springs Uplands School
8 and 10 Davis Drive
Belmont, California

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Introduction

Assignment

The Crystal Springs Uplands School is planning to build a new campus on the subject properties of 8 and 10 Davis Drive located in the city of Belmont, California. An Arborist Report of the existing trees on the subject properties is a required part of the entitlement package. Ralph Osterling Consultants, Inc. (ROC) was retained to complete an assessment of trees protected by the City of Belmont and situated on the developed portion of the subject properties.

Survey Methods

A visual tree assessment (VTA) of the trees was made from the ground. No samples were collected for laboratory analysis, a root collar excavation was not completed and the trees were not climbed as these tasks were not part of the assignment.

Assessed trees were affixed with numerical aluminum tags for reference purposes in the report and tree locations on the Tree Location Map (Appendix 2). The numerical tags were affixed on the north facing side of the trunk approximately five to six feet above grade when physically possible.

The trunk diameters of trees were measured with a diameter tape at the height of 4.5 feet above the existing grade in accordance with Chapter 25 of the Municipal Code for the city of Belmont. Chapter 25 specifies that diameters of multistem trees are to be added together to serve as one diameter. Measurements were limited to the three largest stems of multi-stem trees unless additional stem measurements were required to achieve the 10 inch diameter status to qualify as a protected tree. All trees 10 inches or greater in trunk diameter and situated on the developed portion of the subject property were included in this report.

Observations

On 20 October 2011, ROC visited 8 and 10 Davis Drive in the City of Belmont, California to complete the requested tree assessment. The site was not in use at the time of this report. Maintenance of the property appeared limited to clearing the parking area, maintaining the lawns and related activities.

A total of 77 trees composed of 13 tree species were assessed. Table 1- Tree Species Summary, summarizes relevant attributes of each tree species; trunk diameter, overall condition and suitability for preservation.

The assessed tree species and population are presented in the Species Chart below:

Species Chart

Common Name	Botanical Name	Population
Australian willow	<i>Geijera parviflora</i>	1
Chinese elm	<i>Ulmus parvifolia</i>	1
coast live oak	<i>Quercus agrifolia</i>	12
deodar cedar	<i>Cedrus deodara</i>	5
European white birch	<i>Betula pendula</i>	2
evergreen pear	<i>Pyrus kawakamii</i>	4
incense cedar	<i>Calocedrus decurrens</i>	9
Italian stone pine	<i>Pinus pinea</i>	21
Monterey pine	<i>Pinus radiata</i>	4
Pinus sp.	<i>Pinus sp.</i>	1
sugar gum	<i>Eucalyptus cladocalyx</i>	11
Victorian box	<i>Pittosporum undulatum</i>	1
weeping bottlebrush	<i>Callistemon viminalis</i>	5
	Total Trees	77

Trees were assessed for structure, health and overall condition. Table 2 .1 – Evaluation Factors for Determining Overall Tree Condition defines the characteristics for each rating.

The suitability of a tree for preservation in the “built” environment is often a more important factor than a tree’s overall condition. Suitability for preservation is valuable when used as a design component by developers, architects and planners. This qualitative rating is a contributing factor when deciding the cost-effectiveness and the reasonableness of whether to accommodate a tree by design. Table 2.2 – Suitability Factors for Tree Preservation provides an explanation of the rating system.

Table 3 – Tree Assessment Chart lists the condition ratings and the suitability rating for each assessed tree with relevant comments.

Discussion

The three major tree species populating the site are the Italian stone pine (21 trees), the coast live oak (12 trees) and the sugar gum (11 trees).

Italian stone pine

By far the largest trees in both size and number are the Italian stone pines. This tree species is native to southwestern Europe and Mediterranean regions of Greece, Turkey and Asia Minor. It is capable of reaching a height of 80 feet with a crown spread of 60 feet. These trees were observed to be mostly fair in overall condition. It should be noted that roots from the Italian stone pine species can become disruptive to pavement and hardscape features. Tree 105 has a failed but attached limb that represents a high risk and is to be removed. Trees 104 and 105 are recommended for removal reasons of poor structure and poor health. This tree is not suitable for restricted areas.

coast live oak

The coast live oak is native to the coast range and inland foothills of California. In the proper environment they can reach a height of 70 or more with a greater crown spread that will reach the ground. Mature coast live oaks observed at the site were generally fair to poor in overall condition. Trees 139 and 175 were recommended for removal for reasons of poor structure and poor health. However five younger coast live oaks, trees: 156, 160, 162, 163 and 176 were in overall good condition despite or perhaps because of deferred maintenance.

sugar gum

The third most prevalent tree species on this site is the sugar gum. This drought tolerant tree is a native of southern Australia and can reach a height of 90 feet. The sugar gums were observed to be poor to very poor in overall condition. Structural defects resulting from inhospitable cultural conditions or inept pruning practices have contributed to their overall poor rating. These trees are not aesthetically pleasing and may represent a moderate to high risk. All eleven trees were recommended for removal reasons of poor structure and health.

Other trees at the site include:

Australian willow

The tree is oddly structured but in overall good condition. Overall this is a wonderful tree for the landscape although occasional insect pests can be a nuisance.

Chinese elm

An old limb removal wound is a prominent feature on this tree. It is shade suppressed but observed to be in overall fair condition.

deodar cedar

Five deodar cedars were observed at the site. Although one was rated in overall poor condition the others were fair and good. Given sufficient room, this tree species performs well in the landscape.

European white birch

The birches were observed to be in overall fair condition though not especially attractive. The species is a short lived landscape tree that requires regular watering. Litter (seeds and leaves) can be a nuisance.

evergreen pear

When properly maintained and pruned this species can be a focal point tree. These trees suffer from shade, overly wet soil conditions and inept pruning practices. Four (trees 132, 133, 134 and 135) of the six evergreen pears have been recommended for removal for reasons of poor structure and poor health.

incense cedar

These trees were observed to be attractive but in overall fair condition either for reasons of health or structure. Structurally the bifurcated trunk on this species should be monitored. Given the proper care, they perform well.

Monterey pine

These over mature trees were observed to be in fair to very poor overall condition. Trees 148, 149 and 150 were recommended for removal for reasons of poor structure and poor health. When mature the Monterey pine is not tolerant of soil disturbances. The tree species is not suitable for the urban landscape.

Pinus sp.

ROC was unable to key the species of this small tree that was observed to be in overall poor condition. One other similar tree was observed at the site. This tree (106) was recommended for removal for reasons of poor structure and poor health.

Victorian box

Not an outstanding tree but it is durable and in overall good condition. If desired, this tree is a candidate for relocation.

weeping bottlebrush

Here is a tree that became a shrub. It is a drought tolerant native of Australia. Four were growing together forming a shared canopy and were observed to be in overall good condition. Tree 136 was recommended for removal for reasons of poor structure and poor health.

Summary

In summation, 77 trees were determined to be protected trees as defined by Chapter 25 in the city of Belmont Municipal Code. The 77 trees were assessed for overall condition and suitability. Photographs of the trees individually or in groups are contained in Appendix 1 – Photograph Exhibit. The locations of assessed trees are indicated in Appendix 2 - Tree Location Map.

With very few exceptions, the assessed trees at the subject property were observed to be very mature. Preservation of these mature trees whether by tree protection measures during construction or by relocating trees to a holding area or other sites will be a challenge. In any case, preservation of those trees rated low in suitability is not recommended.

Of the 77 assessed trees, 25 trees were recommended for removal. These trees exhibited significantly poor structure and/or significantly poor health.

The City of Belmont has in place a Master Revenue schedule. This schedule assigns fees based on the trunk diameters of trees to be removed.

During this planning process, ROC strongly encourages retaining the services of a Project Arborist certified by the International Society of Arboriculture (ISA) or a Registered Consulting Arborist by the American Society of Consulting Arborists (ASCA) or a qualified Registered Professional Forester. Doing so will provide the guidance required to make timely and informed decisions.

Submission of this Preliminary Arborist Tree Assessment Report completes the assignment for which ROC was retained.

Literature Referenced

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TABLE 1

Summary of Tree Species



Table 1
 Summary of Tree Species
Crystal Springs Uplands School
 Belmont, CA

LINE NO.	COMMON NAME	BOTANICAL NAME	TREE POPULATION	PERCENTAGE OF POPULATION	RANGE OF TRUNK DIAMETERS ¹					OVERALL CONDITION RATING ²					SUITABILITY FOR PRESERVATION ³			RECOMMENDED FOR REMOVAL ⁴	
					< 6"	6" < 10"	10" < 18"	18" < 24"	24" or greater	Very Poor	Poor	Fair	Good	Very Good	LOW	MODERATE	HIGH		
					1	Australian willow	<i>Geijera parviflora</i>	1	1%	0	0	1					1		
2	Chinese elm	<i>Ulmus parvifolia</i>	1	1%	0	0		1				1			1				2
3	coast live oak	<i>Quercus agrifolia</i>	12	16%	0	0	10		2	1	2	5	4		3	4	5		
4	deodar cedar	<i>Cedrus deodara</i>	5	6%	0	0	4	1			1	3	1		2	2	1		1
5	European white birch	<i>Betula pendula</i>	2	3%	0	0	2					2				2			
6	evergreen pear	<i>Pyrus kawakamii</i>	4	5%	0	0	4				4				4				4
7	incense cedar	<i>Calocedrus decurrens</i>	9	12%	0	0		2	7		1	8			1	8			
8	Italian stone pine	<i>Pinus pinea</i>	21	27%	0	0	2	7	12		8	11	2		15	6			2
9	Monterey pine	<i>Pinus radiata</i>	4	5%	0	0			4	1	2	1			3	1			3
10	Pinus sp.	<i>Pinus sp.</i>	1	1%	0	0		1			1				1				1
11	sugar gum	<i>Eucalyptus cladocalyx</i>	11	14%	0	0	6	5		7	4				11				11
12	Victorian box	<i>Pittosporum undulatum</i>	1	1%	0	0	1						1			1			
13	weeping bottlebrush	<i>Callistemon viminalis</i>	5	6%	0	0	4	1			1	4			5				1
COLUMN TOTALS			77	100%	0	0	34	18	25	9	24	35	9	0	46	24	7		25

1/ Range of Trunk Diameters: City of Belmont Master Revenue Schedule. Requires current confirmation from the City Refer to the Land Title Survey (Feb. 2011) for trees less than 10 inches in trunk diameter.
 2/ Overall Condition: Please refer to Table 2.1 for an explanation of terms.
 3/ Suitability for Preservation: Please refer to Table 2.2 for an explanation of terms.
 4/ Recommended for removal: Tree was recommended for removal due to poor structure, poor health or both

TABLE 2.1

Evaluation Factors for Determining
Overall Tree Condition



Table 2.1

Evaluation Factors for Determining
Overall Tree Condition

Structure

- 1-Very Poor Trunk has large pockets of decay, is weakly bifurcated or has a severe lean. Limbs or branches are poorly attached or dead. Possible hazard.
- 2-Poor Limbs or branches are poorly attached or developed. Canopy is not symmetrical. Trunk has a lean.
- 3-Fair Trunk, limb and branch development though flawed is typical of this species
- 4-Good Trunk is well developed with well-attached limbs and branches have some flaws but hardly visible.
- 5-Very Good In addition to attributes of a good rating, the tree exhibits a well-developed root flare and a balanced canopy.

Health

- 1-Very Poor Tree displays severe dieback of branches, canopy is extremely sparse. May exhibit extensive pathogen infestation. Or tree is dead.
- 2-Poor Tree displays some dieback of branches, foliar canopy is sparse, little to no signs of new growth or vigor. Possible pathogen infestation.
- 3-Fair Tree is developing in a manner typical to others in the area. Canopy is full.
- 4-Good New growth is vigorous as evidenced by stem elongation and color. Canopy is dense.
- 5-Very Good In addition to attributes of a good rating, tree is displaying extremely vigorous growth and trunk displays a pattern of vigor cracks or lines.

Overall

- 0-DEAD Tree has no green foliage and no green in sampled twigs.
- 1-Very Poor Tree is in severe decline or dead.
- 2-Poor Tree is in decline or lacks vigor.
- 3-Fair Tree is typical of species in the area.
- 4-Good Tree is vigorous with few visible flaws.
- 5-Very Good Tree is extremely vigorous.

TABLE 2.2

Suitability Factors for Tree Preservation



Table 2.2

Suitability Factors for Tree Preservation

Suitability Factors

To assist in the design process assessed trees have been rated as to suitability for preservation. Factors that influence suitability include:

Health: Overall tree vigor, extension of new growth, proper closing of wounds and the presence of plant pathogens.

Structure: The overall tree architecture, including roots, trunk, limbs, and branches are visually assessed for defects. A defect that can be corrected by proper arboricultural practices may allow a tree to be preserved.

Safe and Useful Life Expectancy: The life of a tree is much like a bell-shaped curve; where aging accentuates tree vigor until a point at the top of the curve where aging now reduces tree vigor and decline begins. A species may be long lived but have a poor structure that is prone to fail (e.g. blue gum) and should not be considered safe or useful.

Tree Species: The factors described above are predicated on the tree species. Certain species grow slowly and decline slowly (e.g. coast live oak). Other species grow quickly and decline quickly (e.g. Monterey pine). Tree species that are invasive, or a nuisance or have an inherently poor structure are to be avoided (e.g. Bailey acacia).

Suitability Ratings

When the above factors are considered, assessed trees were rated as HIGH, MODERATE or LOW in suitability for preservation. An explanation for each rating is provided below.

HIGH: Trees which are significant and expected to provide long-term contributions to the site. They display fair or better health and fair or better structural condition. On-going suitability may require typical maintenance practices commonly associated with the tree species. These trees are the most suitable for retention measures and are worthy of consideration during the design process or design revision.

MODERATE: Trees which contribute to the site but provide less than significant contributions for reasons of health, structural condition or appearance. On-going suitability will require properly implemented maintenance practices. Design revisions to preserve these trees may not be warranted.

LOW: Trees which provide minor contributions to the property for reasons of poor health, structural condition or appearance. A tree species that is a nuisance due to litter, will grow too large for the area or is known to develop a structure prone to failure is also rated low in suitability. Generally speaking, trees in this category are not expected to benefit or respond to acceptable corrective measures. Removal of these trees will often allow the safe, useful and aesthetic enjoyment of the property. *Preservation of low rated trees is not recommended.*

TABLE 3

Tree Assessment Chart



Table 3
Tree Assessment Chart
Crystal Springs Uplands School
Belmont, CA

Tree No.	1 Trunk Diameter ¹	2 Trunk Diameter ¹	3 Trunk Diameter ¹	4 Trunk Diameter ¹	Adjusted Trunk Diameter ²	Common Name	Botanical Name	Structure	Health	Overall Condition ³	Protected Tree ⁴	Suitability ⁵	Recommended Removals ⁶	Comment 1	Comment 2	Comment 3
101	19.2				19	Chinese elm	<i>Ulmus parvifolia</i>	Poor	Fair	Fair	Yes	Low		Branch cavity	Sparse canopy	
102	21.9				22	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	Fair	Yes	Mod		Dense canopy		
103	29.4				29	Monterey pine	<i>Pinus radiata</i>	Fair	Fair	Fair	Yes	Mod		Shared canopy		
104	38.3				38	Italian stone pine	<i>Pinus pinea</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Moderate pest issues	
105	48.6				49	Italian stone pine	<i>Pinus pinea</i>	Poor	Poor	Poor	Yes	Low	R	HAZARD- Remove Hanging Limb	Removal recommended: poor structure & health	Moderate pest issues
106	18				18	Pinus sp.	<i>Pinus sp.</i>	Fair	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Sparse canopy	Suppressed growth
107	27.2				27	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	Fair	Yes	Mod		Sparse canopy		
108	11.4				11	coast live oak	<i>coast live oak</i>	Poor	Fair	Fair	Yes	Mod		Trunk lean	Suppressed growth	
109	18.7				19	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	Fair	Yes	Mod		Cavity at root collar	Shared canopy	
110	24.4				24	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Fair	Yes	Mod		Bifurcated trunk issue	Shared canopy	
111	27				27	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Fair	Yes	Mod		Bifurcated trunk issue	Suppressed growth	
112	21.5				22	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	Fair	Yes	Mod		Shared canopy	Trunk lean	
113	18.4	18			37	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Fair	Yes	Mod		Dense canopy	One sided canopy	
114	9.3	13	10		32	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Fair	Yes	Mod		Stunted growth	One sided canopy	
115	15.4	7.7	6.8		30	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Fair	Yes	Mod		One sided canopy		
116	24.1				24	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	Poor	Yes	Low		Stunted growth	One sided canopy	Bifurcated trunk issue
117	16.3	9.5	13		39	coast live oak	<i>Quercus agrifolia</i>	Poor	Fair	Fair	Yes	Mod		Suppressed growth		
118	16				16	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	Fair	Yes	Low		Trunk lean	Suppressed growth	

Table 3
Tree Assessment Chart
Crystal Springs Uplands School
Belmont, CA

Tree No.	1 Trunk Diameter ¹	2 Trunk Diameter ¹	3 Trunk Diameter ¹	4 Trunk Diameter ¹	Adjusted Trunk Diameter ²	Common Name	Botanical Name	Structure	Health	Overall Condition ³	Protected Tree ⁴	Suitability ⁵	Recommended Removals ⁶	Comment 1	Comment 2	Comment 3
119	27				27	Italian stone pine	<i>Pinus pinea</i>	Poor	Fair	Fair	Yes	Low		Trunk lean	One sided canopy	
120	22.2				22	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	Fair	Yes	Low		Sparse canopy	Bifurcated leader	
121	23.8				24	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	Fair	Yes	Mod		Trunk undercut	Trunk lean	
122	21.3				21	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	Fair	Yes	Low		Suppressed growth	Sparse canopy	
123	21.3				21	Italian stone pine	<i>Pinus pinea</i>	Poor	Poor	Poor	Yes	Low		Bifurcated trunk issue	Suppressed growth	Sparse canopy
124	26.5				27	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	Fair	Yes	Mod		Suppressed growth		
125	6.8	6			13	coast live oak	<i>Quercus agrifolia</i>	Fair	Fair	Fair	Yes	Mod		Moderate pest issues	Root collar not exposed	Trunk wounds
126	12.5				13	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	Fair	Yes	Mod		Root collar not exposed	Dense canopy	
127	20.5				21	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	Fair	Yes	Mod		One sided canopy		
128	9.5				10	coast live oak	<i>Quercus agrifolia</i>	Fair	Poor	Poor	Yes	Low		Trunk wounds	Severe pest issues	
129	16				16	deodar cedar	<i>Cedrus deodara</i>	Fair	Fair	Fair	Yes	Mod		Bifurcated leader	Trunk lean	
130	12.8				13	deodar cedar	<i>Cedrus deodara</i>	Poor	Fair	Poor	Yes	Low	R	Removal recommended due to poor structure	Sparse canopy	Trunk undercut
131	10.5				11	Victorian box	<i>Pittosporum undulatum</i>	Fair	Good	Good	Yes	Mod		Dense canopy		
132	11.8				12	evergreen pear	<i>Pyrus kawakamii</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Sparse canopy	Trunk wounds
133	11.3				11	evergreen pear	<i>Pyrus kawakamii</i>	Fair	Poor	Poor	Yes	Low	R	Removal recommended: due to poor health		Trunk wounds
134	12.5				13	evergreen pear	<i>Pyrus kawakamii</i>	Fair	Poor	Poor	Yes	Low	R	Removal recommended: due to poor health	Trunk wounds	
135	12.6				13	evergreen pear	<i>Pyrus kawakamii</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Sparse canopy	Trunk lean
136	4.2	3.5	2.4		10	weeping bottlebrush	<i>Callistemon viminalis</i>	Very Poor	Poor	Very Poor	Yes	Low	R	Removal recommended: poor structure & health	One sided canopy	Suppressed growth

Table 3
Tree Assessment Chart
Crystal Springs Uplands School
Belmont, CA

Tree No.	1 Trunk Diameter ¹	2 Trunk Diameter ¹	3 Trunk Diameter ¹	4 Trunk Diameter ¹	Adjusted Trunk Diameter ²	Common Name	Botanical Name	Structure	Health	Overall Condition ³	Protected Tree ⁴	Suitability ⁵	Recommended Removals ⁶	Comment 1	Comment 2	Comment 3
137	29.8				30	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	Fair	Yes	Low		Shared canopy	Branch end weight issue	
138	47.4				47	Italian stone pine	<i>Pinus pinea</i>	Poor	Good	Fair	Yes	Low		Trunk wounds	Shared canopy	
139	13.5	12			26	coast live oak	<i>Quercus agrifolia</i>	Good	Very Poor	Very Poor	Yes	Low	R	Removal recommended: poor structure & health	Sparse canopy	
140	22.4				22	Italian stone pine	<i>Pinus pinea</i>	Poor	Fair	Poor	Yes	Low		Stunted growth	Sparse canopy	
141	12.2	24			36	Italian stone pine	<i>Pinus pinea</i>	Fair	Very Poor	Poor	Yes	Low		Removal recommended due to poor health	Tree in decline	Branch dieback
142	20				20	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	Poor	Yes	Low		Suppressed growth		
143	9.8	8.9	22		41	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	Poor	Yes	Low		Suppressed growth		
144	28	15	7.5		50	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	Poor	Yes	Low		Low branch over entrance	Suppressed growth	
145	14.1				14	European white birch	<i>Betula pendula</i>	Fair	Fair	Fair	Yes	Mod		Dense canopy	Shared canopy	
146	9.8				10	European white birch	<i>Betula pendula</i>	Fair	Fair	Fair	Yes	Mod		Dense canopy	One sided canopy	
147	43				43	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	Fair	Yes	Low		Dense canopy	Over mature tree	
148	26.4	36	35		97	Monterey pine	<i>Pinus radiata</i>	Fair	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Stunted growth	Branch dieback
149	25.5				26	Monterey pine	<i>Pinus radiata</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health	Branch dieback	Stunted growth
150	25.6				26	Monterey pine	<i>Pinus radiata</i>	Very Poor	Poor	Very Poor	Yes	Low	R	Removal recommended: poor structure & health	Branch dieback	
151	5.5	3.5	3.2		12	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	Fair	Yes	Low		Dense canopy		
152	¥10.6	¥6.2			17	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	Fair	Yes	Low		Dense canopy		
153	¥6.3	¥4.2	3.5		14	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	Fair	Yes	Low		Dense canopy		
154	¥7	¥8	¥5.3		20	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	Fair	Yes	Low		Dense canopy		

Table 3
Tree Assessment Chart
Crystal Springs Uplands School
Belmont, CA

Tree No.	1 Trunk Diameter ¹	2 Trunk Diameter ¹	3 Trunk Diameter ¹	4 Trunk Diameter ¹	Adjusted Trunk Diameter ²	Common Name	Botanical Name	Structure	Health	Overall Condition ³	Protected Tree ⁴	Suitability ⁵	Recommended Removals ⁶	Comment 1	Comment 2	Comment 3
155	13.2				13	Italian stone pine	<i>Pinus pinea</i>	Good	Good	Good	Yes	Mod		Good overall		
156	5.5	2.6	2		10	coast live oak	<i>Quercus agrifolia</i>	Good	Good	Good	Yes	High		Good overall	Consider for relocation	
157	14.9				15	deodar cedar	<i>Cedrus deodara</i>	Good	Fair	Fair	Yes	Mod		Branch dieback		
158	8.5	9.2			18	deodar cedar	<i>Cedrus deodara</i>	Poor	Good	Fair	Yes	Low		Bifurcated trunk issue		
159	16.1				16	deodar cedar	<i>Cedrus deodara</i>	Good	Good	Good	Yes	High		Good overall	Consider for relocation	
160	9.7				10	coast live oak	<i>Quercus agrifolia</i>	Good	Fair	Fair	Yes	High		Balanced canopy	Consider for relocation	
161	19.4				19	sugar gum	<i>Eucalyptus cladocalyx</i>	Poor	Fair	Poor	Yes	Low	R	Removal recommended due to poor structure	Branch end weight issue	Trunk lean
162	5.1	4.1	2.9		12	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	Good	Yes	High		Bifurcated trunk issue	Consider for relocation	
163	5.7	4.1	2		12	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	Good	Yes	High		Bifurcated trunk issue	Consider for relocation	
164	11.5				12	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Fair	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Tree was topped	Evidence of limb failure
165	15.3				15	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Good	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Trunk wounds	Evidence of limb failure
166	18.7				19	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Good	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Evidence of limb failure	Failed tree
167	17.7				18	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Good	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Branch failure	
168	8.6	9.7			18	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Poor	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Bifurcated trunk issue	Severe pest issues
169	≈24				24	Italian stone pine	<i>Pinus pinea</i>	Fair	Very Good	Good	Yes	Mod		Vigorous growth		
170	18.5				19	sugar gum	<i>Eucalyptus cladocalyx</i>	Very Poor	Fair	Poor	Yes	Low	R	Removal recommended due to poor structure	Evidence of limb failure	Trunk lean
171	17				17	sugar gum	<i>Eucalyptus cladocalyx</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended due to poor structure	High foliar canopy	Trunk lean
172	5.7	5.2	5.5		16	sugar gum	<i>Eucalyptus cladocalyx</i>	Poor	Very Poor	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Trunk wounds	Tree in decline

Table 3
 Tree Assessment Chart
Crystal Springs Uplands School
 Belmont, CA

Tree No.	1 Trunk Diameter ¹	2 Trunk Diameter ¹	3 Trunk Diameter ¹	4 Trunk Diameter ¹	Adjusted Trunk Diameter ²	Common Name	Botanical Name	Structure	Health	Overall Condition ³	Protected Tree ⁴	Suitability ⁵	Recommended Removals ⁶	Comment 1	Comment 2	Comment 3
173	15				15	sugar gum	<i>Eucalyptus cladocalyx</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended due to poor structure	Trunk wounds	Evidence of limb failure
174	11.4				11	sugar gum	<i>Eucalyptus cladocalyx</i>	Poor	Very Poor	Very Poor	Yes	Low	R	Removal recommended due to poor structure	Trunk lean	Trunk wounds
175	17				17	coast live oak	<i>Quercus agrifolia</i>	Poor	Poor	Poor	Yes	Low	R	Removal recommended: poor structure & health		
176	17				17	coast live oak	<i>Quercus agrifolia</i>	Good	Very Good	Good	Yes	High		Good overall	Consider for relocation	
177	3.3	3	2.8	1.9	11	Australian willow	<i>Geijera parviflora</i>	Good	Good	Good	Yes	High		Balanced canopy	Consider for relocation	

1/ Trunk Diameter: Measured at 4.5 feet above the existing grade with a diameter tape.

2/ Adjusted Trunk Diameter: Diameters were rounded to whole numbers. Multi-stem trunk diameters were added together as stated in the Belmont Municipal Code, Chapter 25

3/ Overall Condition: Please refer to Table 2.1 for an explanation of terms.

4/ Protected Tree: All woody perennials, excluding shrubs, 10 inches or greater in trunk diameter when measured at 4.5 feet above grade (Belmont Municipal Code, Chapter 25)

5/ Suitability for Preservation: Please refer to Table 2.2 for an explanation of terms. Mod. = Moderate

6/ Recommended Removals: Tree was recommended for removal due to poor structure, poor health or both.

¥/ Symbol indicates that the trunk or trunks were measured below trunk bifurcation or largest limb

TREE Highlighted trees were observed to be at risk for structural failure and should be mitigated prior to beginning construction activities

Appendix 1

Photograph Exhibit



Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

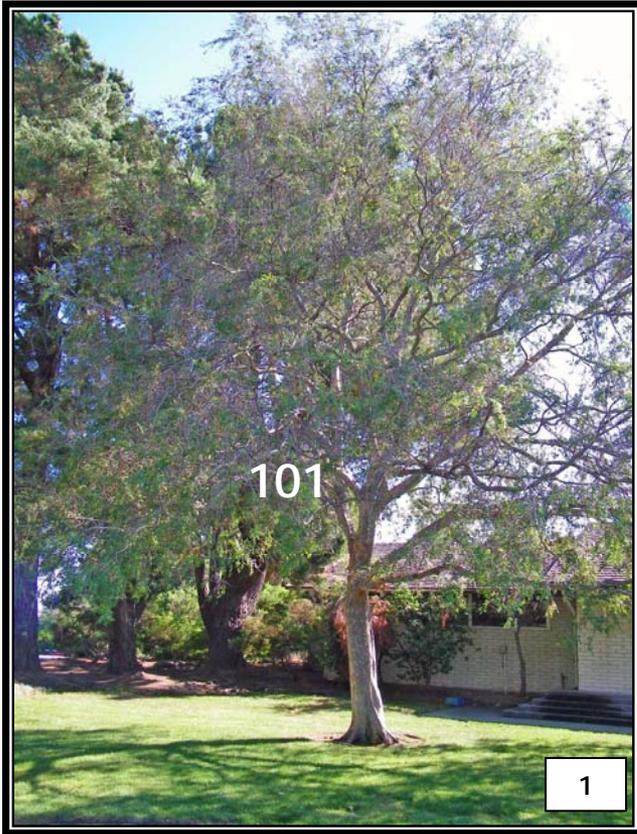


Photo 1. Chinese elm

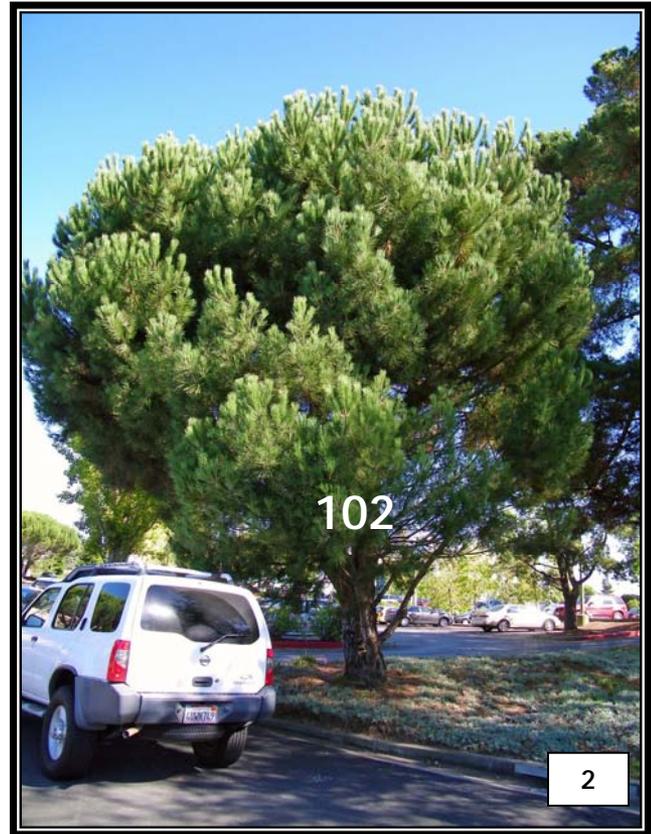


Photo 2. Italian stone pine

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

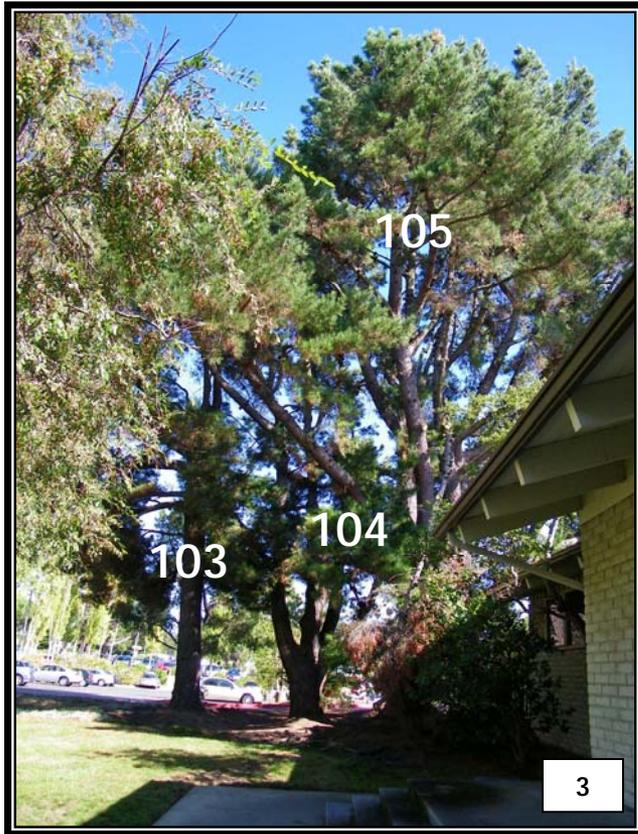


Photo 3. Monterey pine (103) and two Italian stone pines (104 & 105); a failed but attached branch on tree 105 could cause injury. This hazard is to be mitigated.

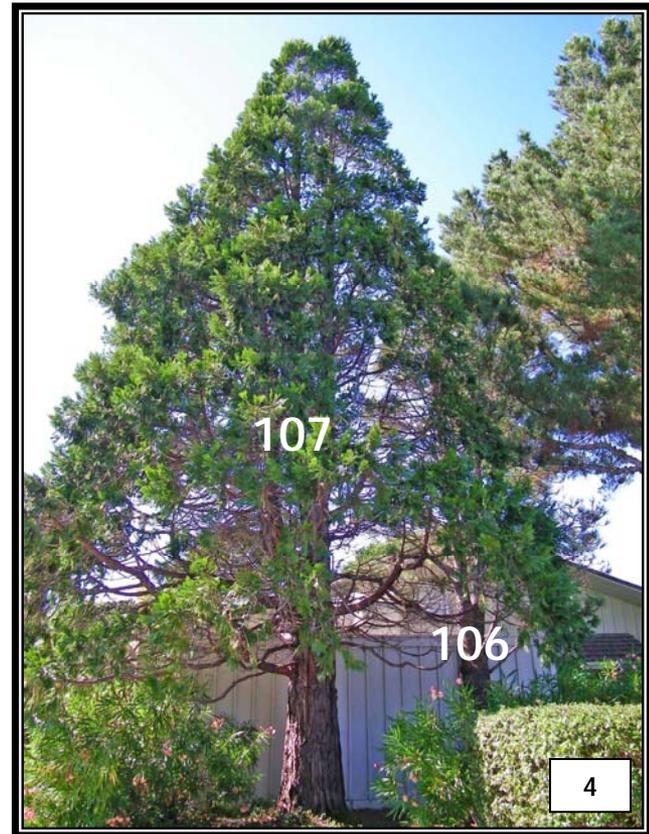


Photo 4. two incense cedars

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

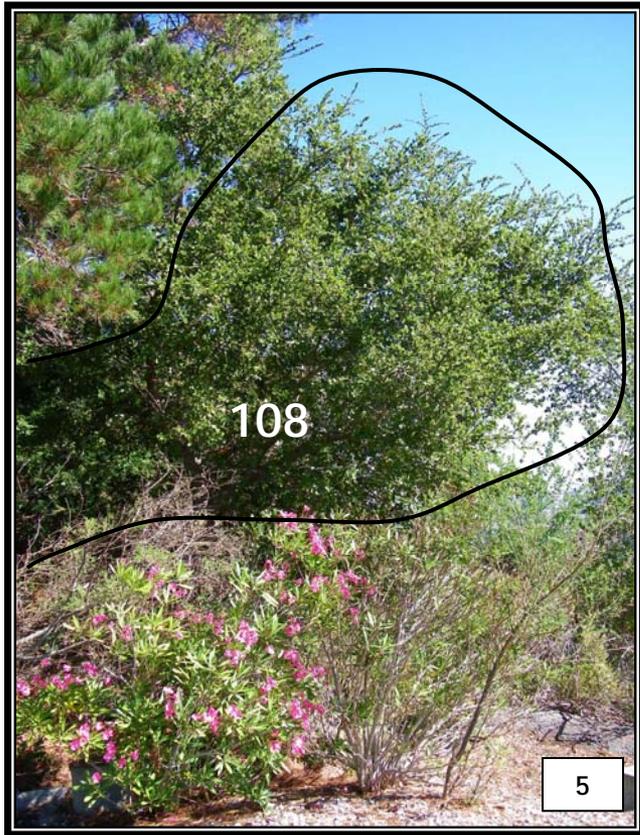


Photo 5. coast live oak, outlined in black

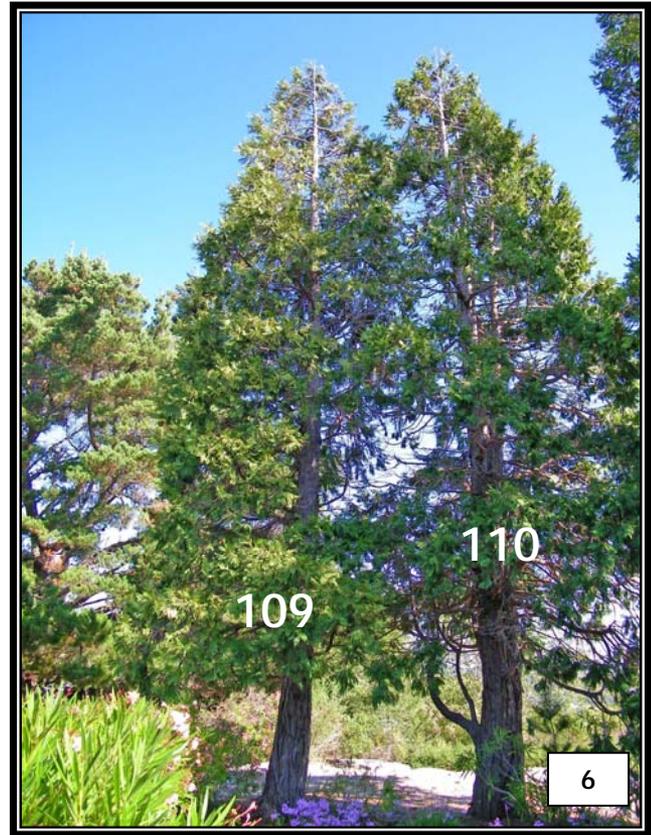


Photo 6. two incense cedars

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

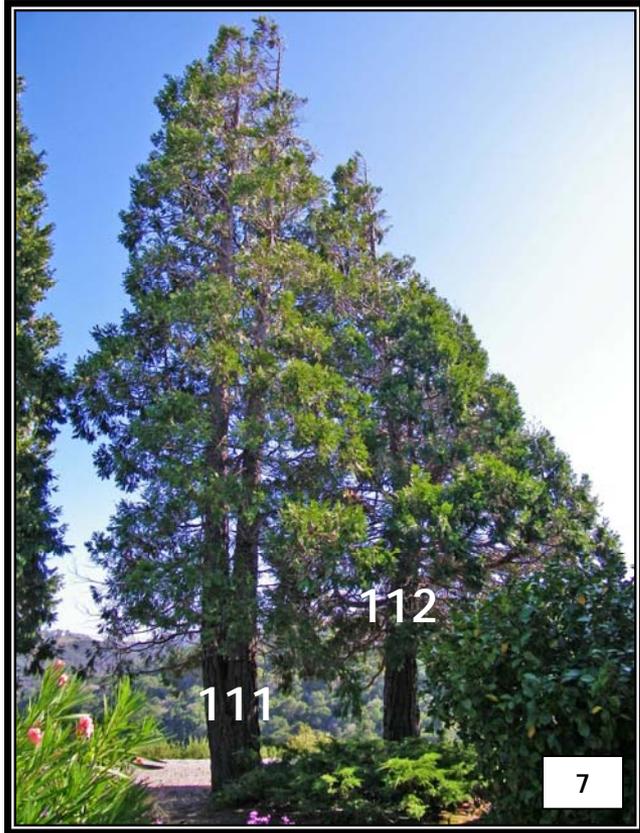


Photo 7. two incense cedars



Photo 8. four incense cedars

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

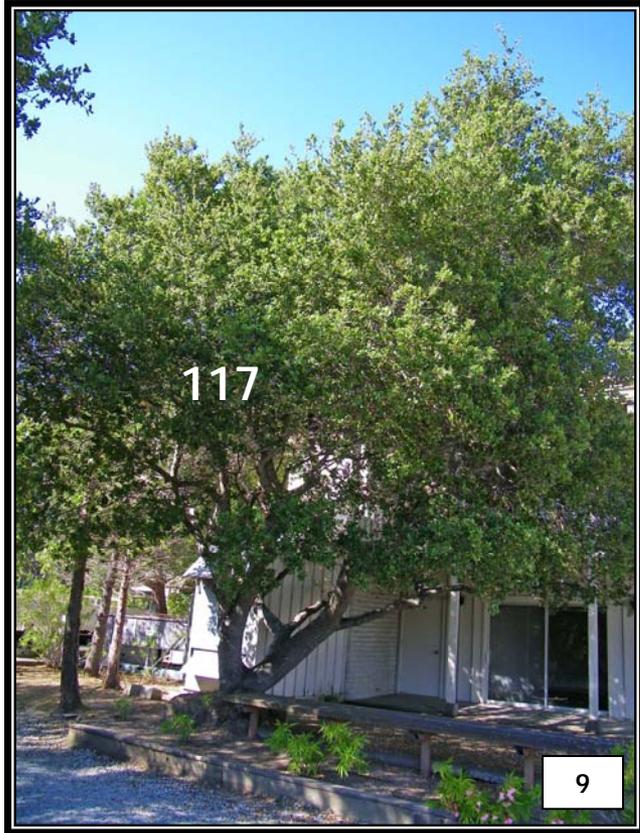


Photo 9. coast live oak

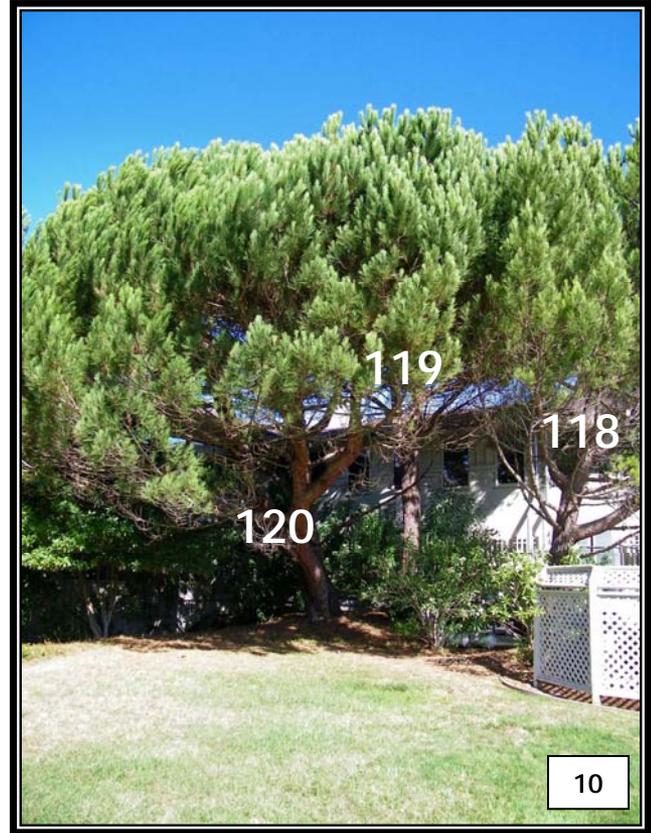


Photo 10. three Italian stone pines

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 11. four Italian stone pines

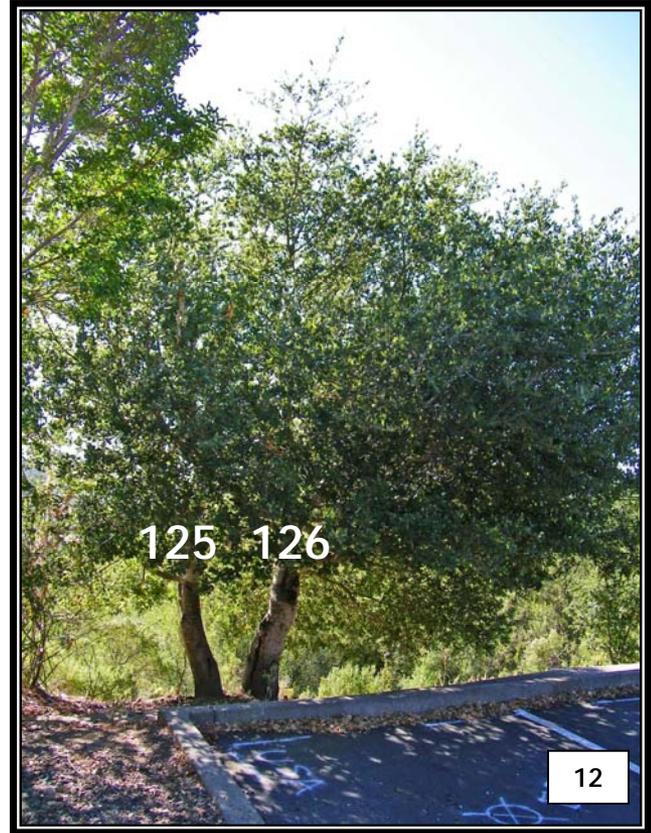


Photo 12. two coast live oaks

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

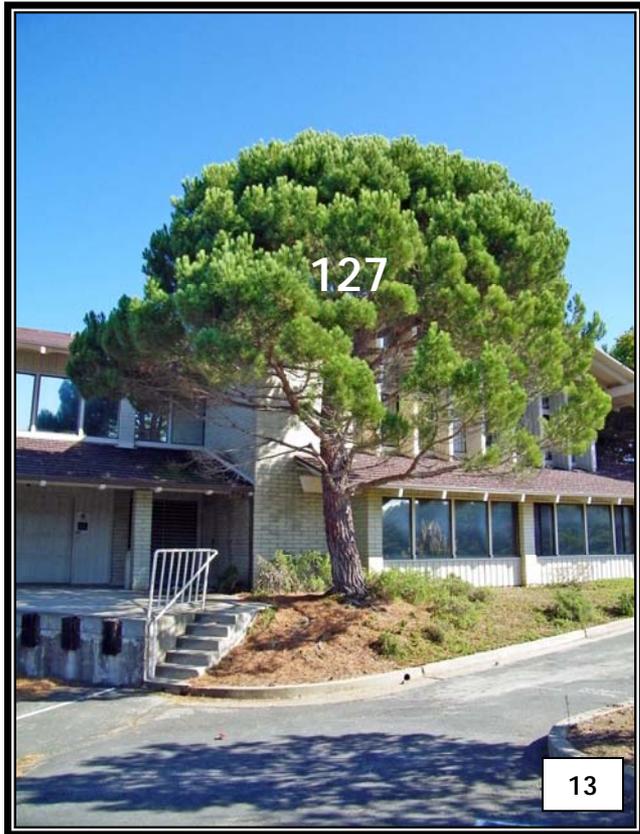


Photo 13. Italian stone pine

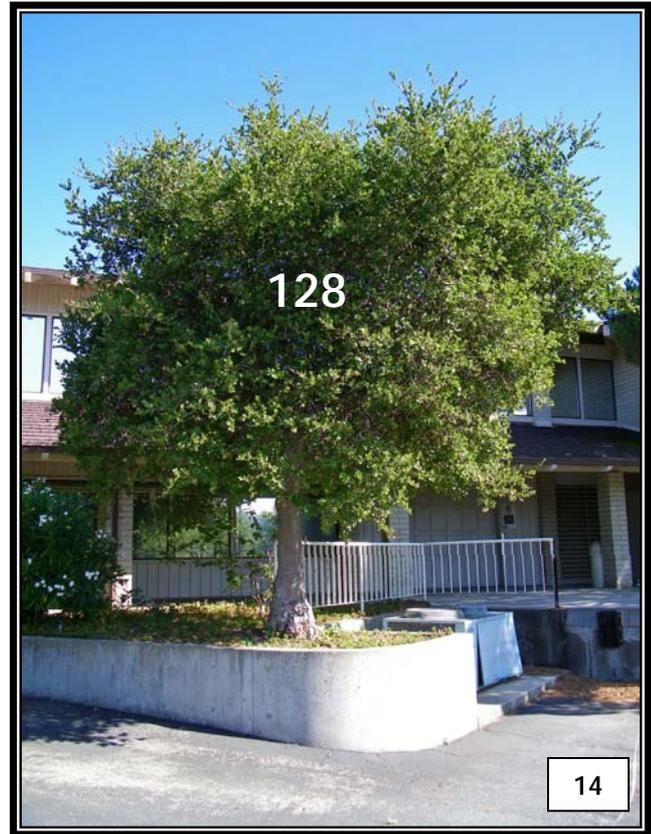


Photo 14. coast live oak

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

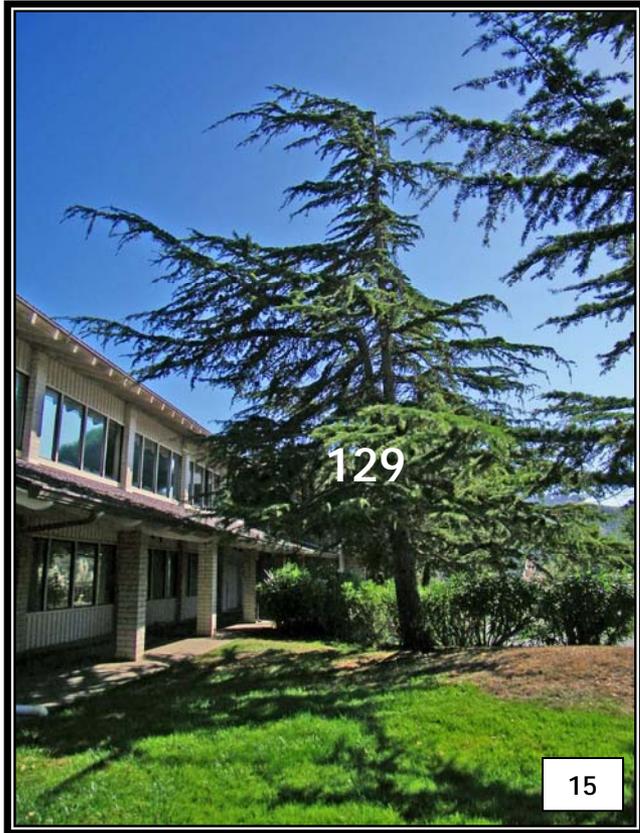


Photo 15. deodar cedar

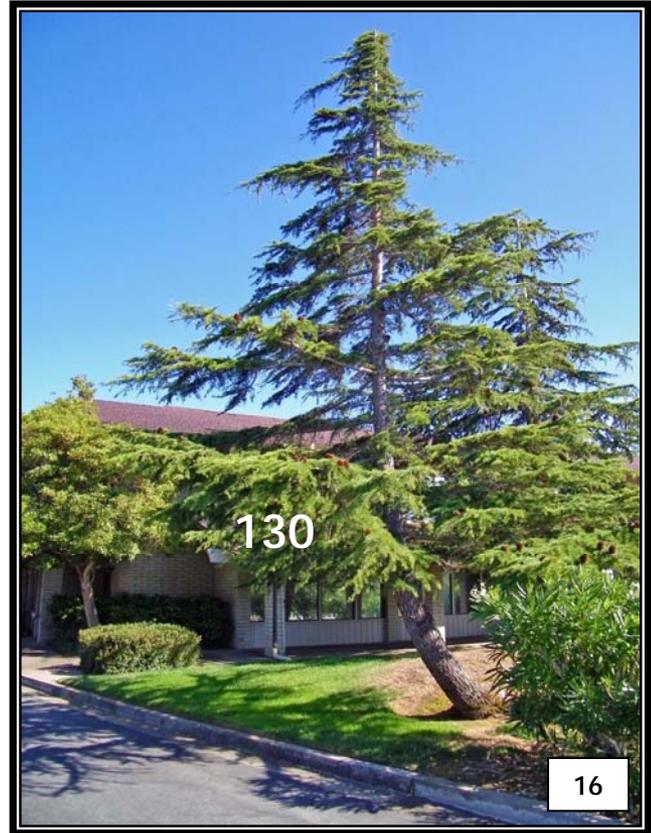


Photo 16. deodar cedar

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

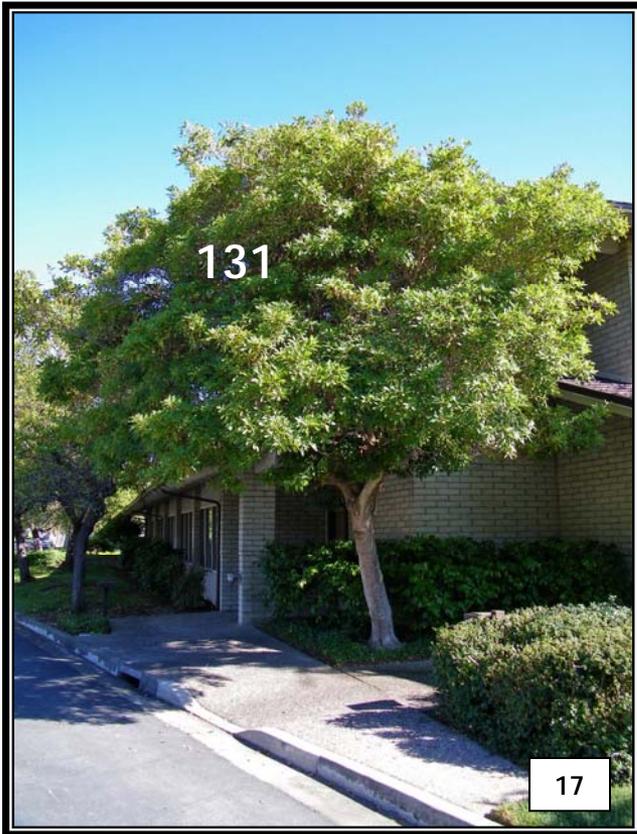


Photo 17. Victorian box



Photo 18. two evergreen pears

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

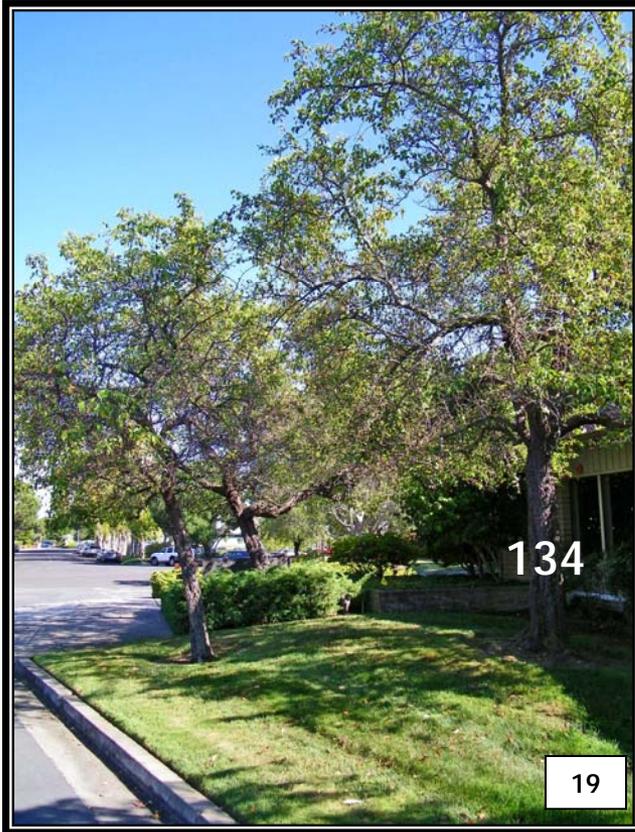


Photo 19. evergreen pear

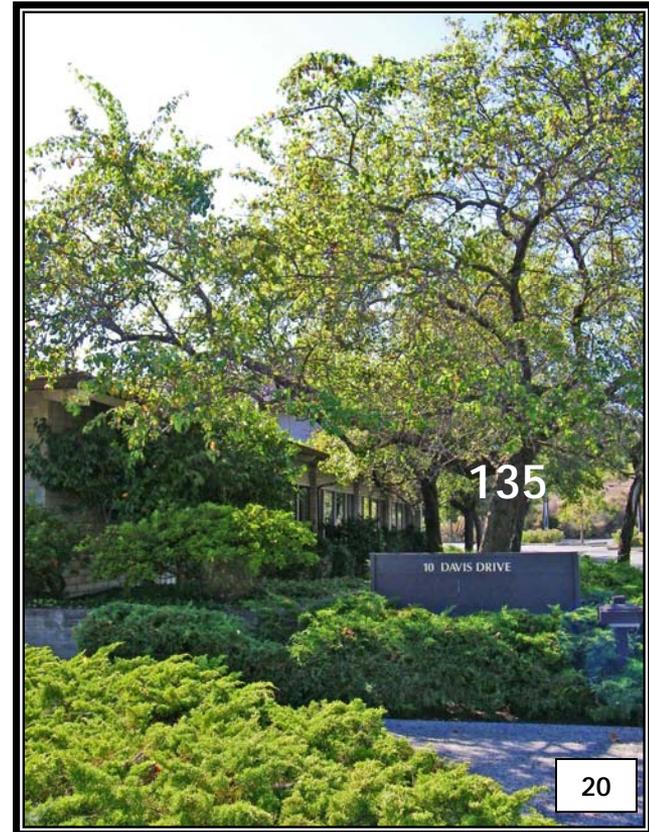


Photo 20. evergreen pear at main entrance of 10 Davis Drive

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

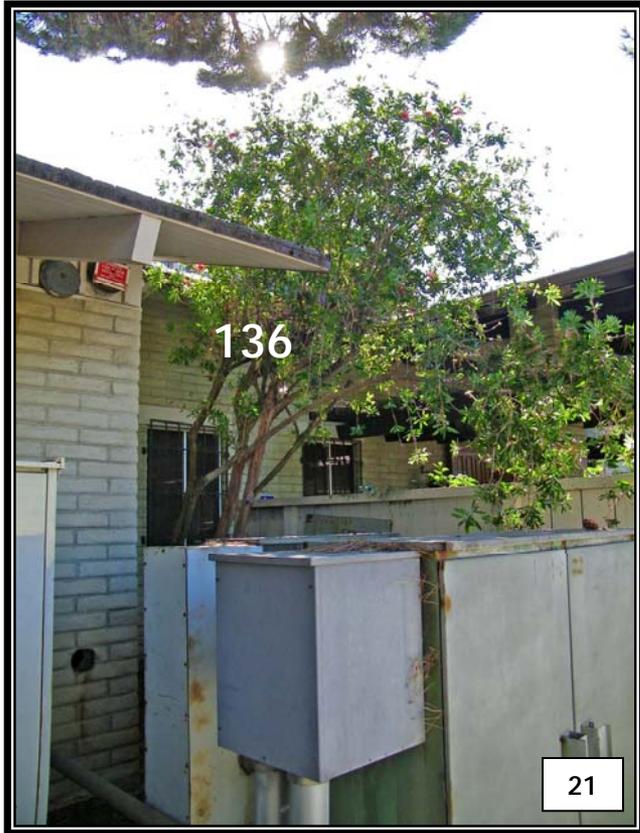


Photo 21. weeping bottlebrush



Photo 22. two Italian stone pines

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 23. coast live oak



Photo 24. three Italian stone pines

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 25. two Italian stone pines



Photo 26. two weeping birches at front entrance of 8 Davis Drive

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

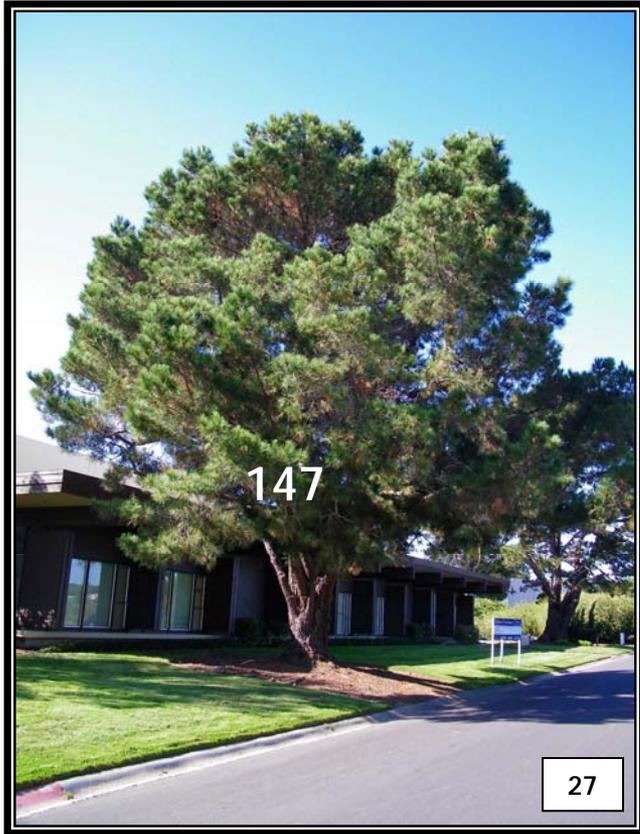


Photo 27. Italian stone pine

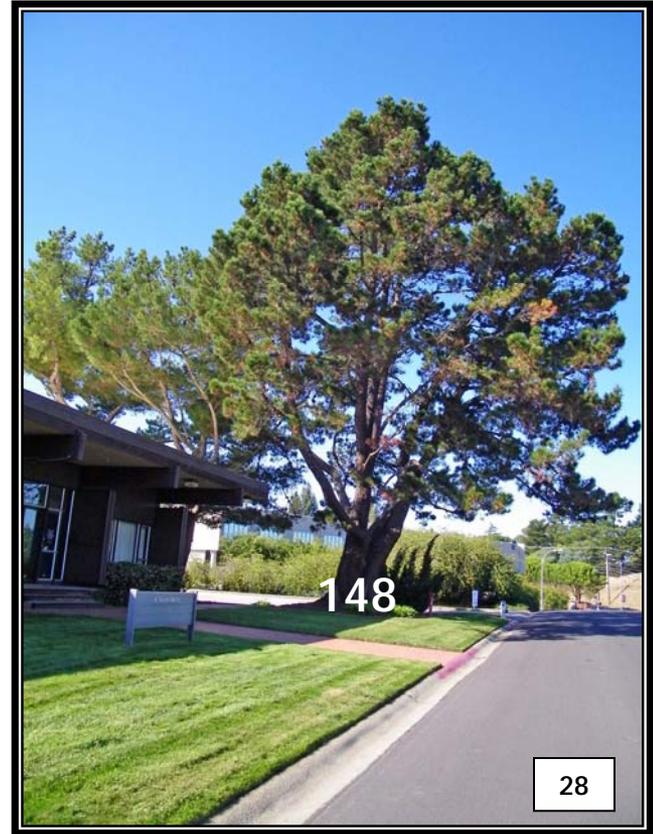


Photo 28. Monterey pine

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 29. two Monterey pines

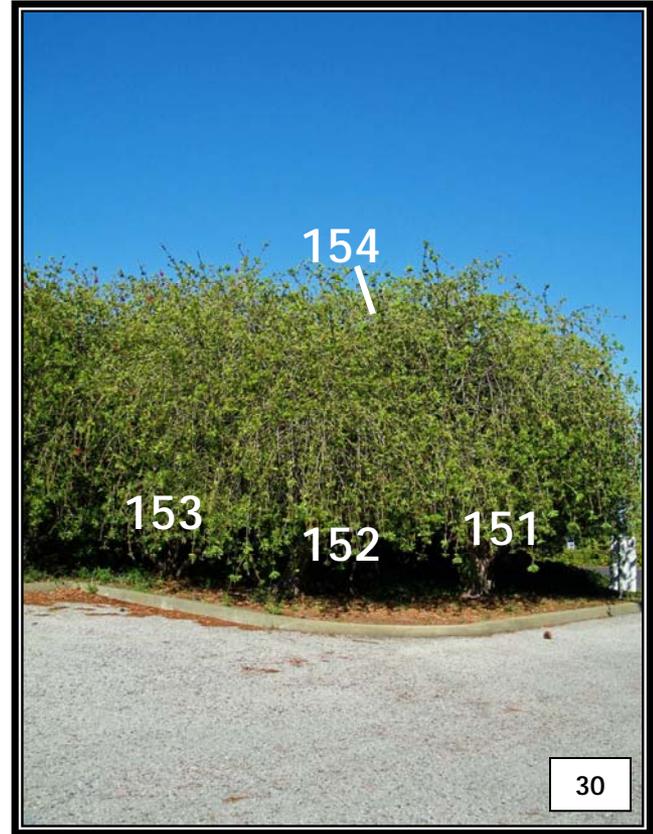


Photo 30. four weeping bottlebrushes
begin a hedge between properties

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

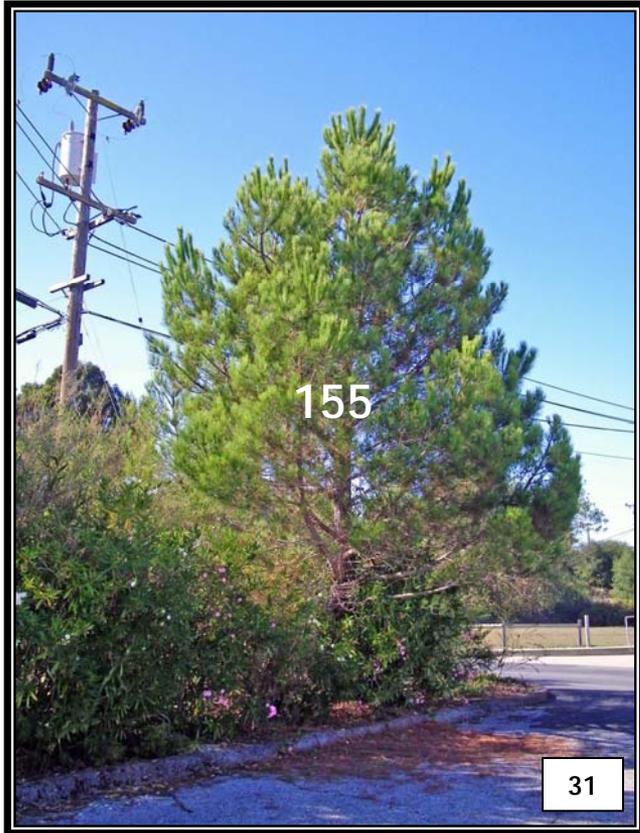


Photo 31. Italian stone pine



Photo 32. three coast live oaks

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

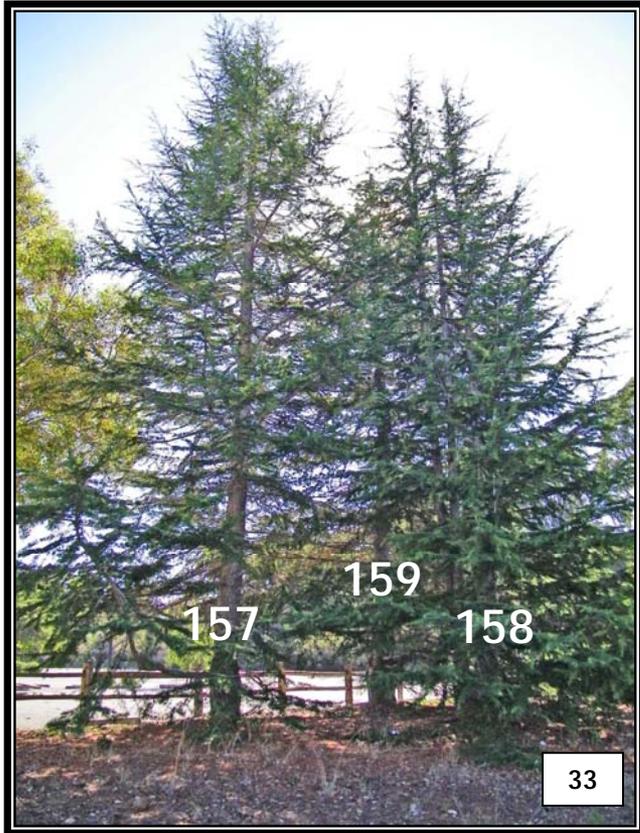


Photo 33. three deodar cedars

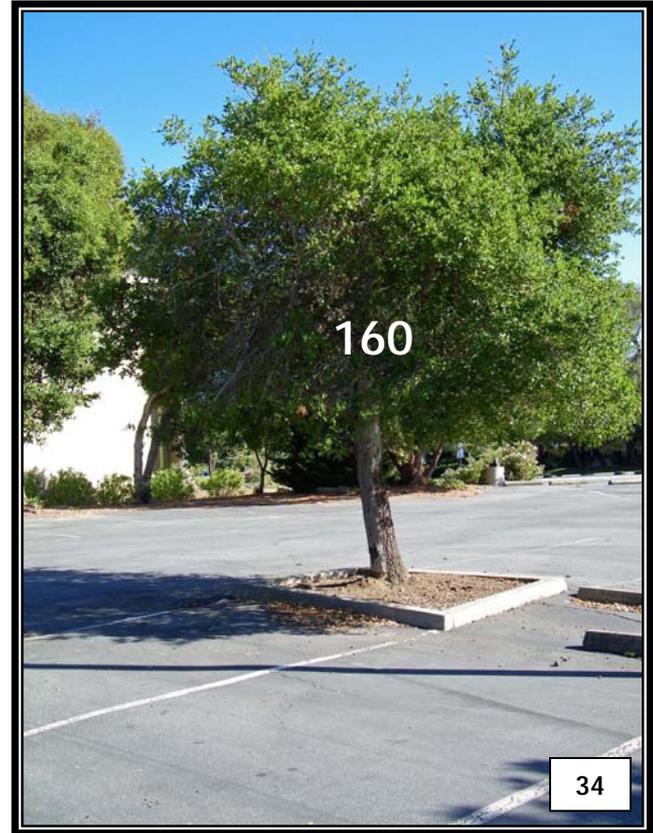


Photo 34. coast live oak

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 35. two sugar gums

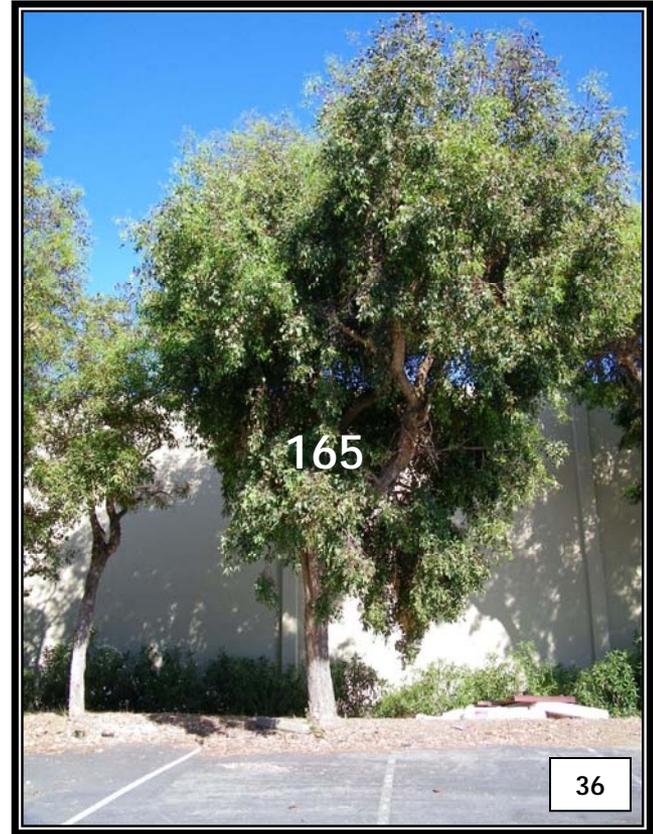


Photo 36. sugar gum

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 37. three sugar gums

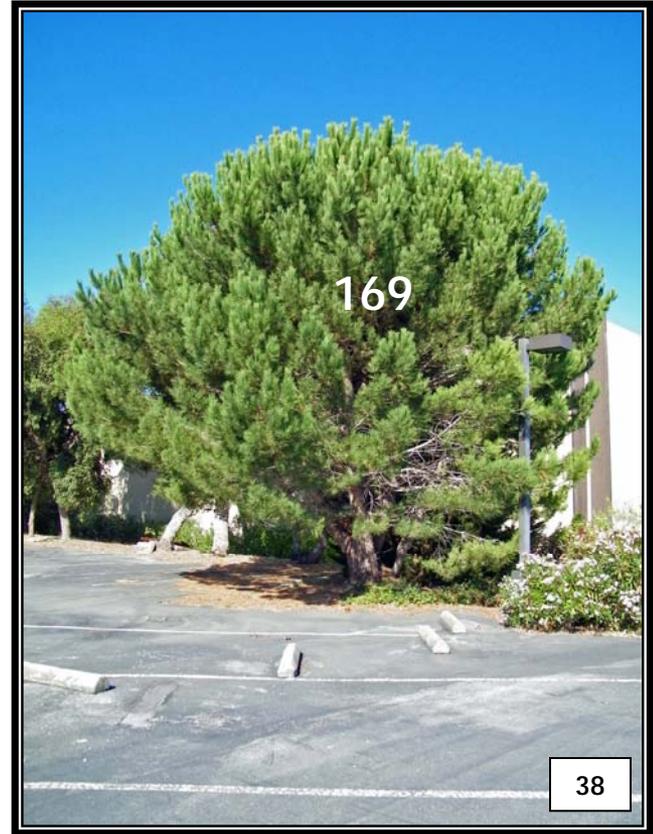


Photo 35. Italian stone pine

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 39. two sugar gums



Photo 40. sugar gum

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA



Photo 41. two sugar gums

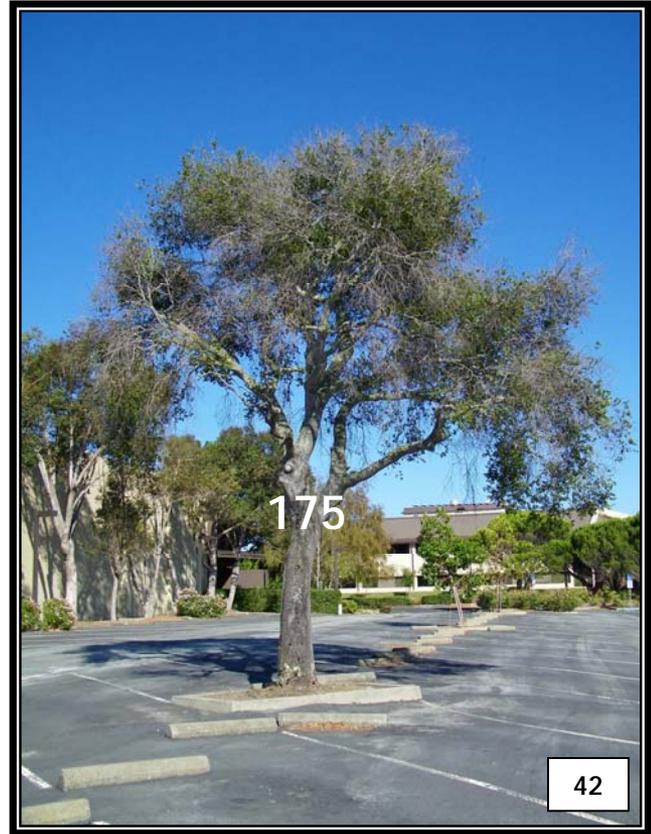


Photo 42. coast live oak

Appendix 1
Photograph Exhibit
Crystal Springs Uplands School
Belmont, CA

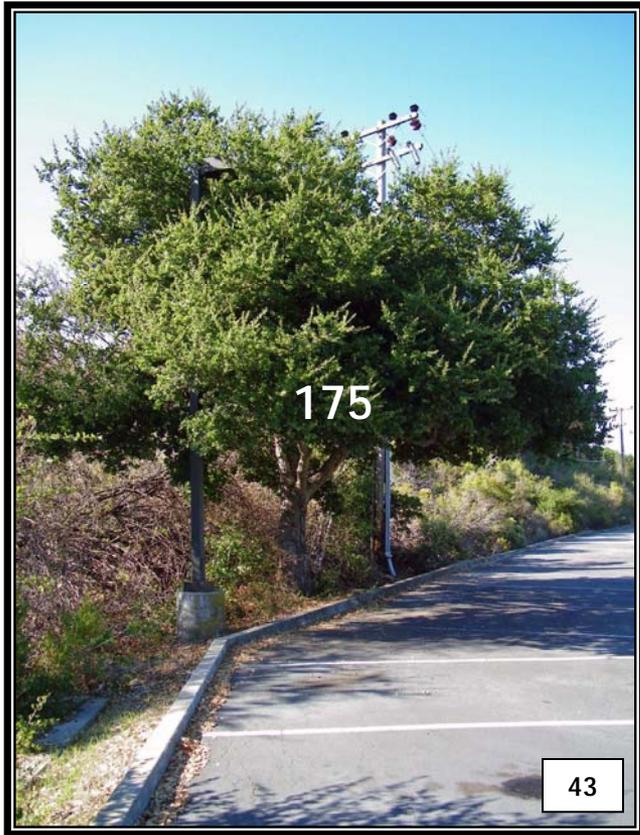


Photo 43. coast live oak

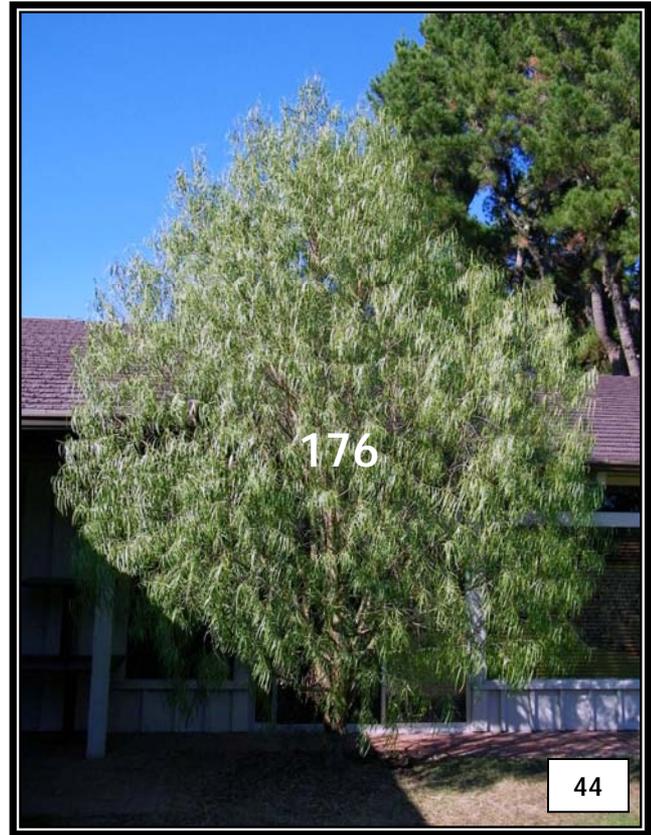


Photo 44. Australian willow

Appendix 2

Tree Location Map



PROPERTY DESCRIPTION:

PARCEL 1 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON DECEMBER 27, 1977, IN BOOK 40 OF PARCEL MAPS AT PAGE 10, SAN MATEO COUNTY.

PARCEL 2 AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON DECEMBER 27, 1977, IN BOOK 40 OF PARCEL MAPS AT PAGE 10, SAN MATEO COUNTY.

PRELIMINARY TITLE REPORT:

NORTH AMERICAN TITLE COMPANY,
ORDER NO. 55905-1062834-11
ESCROW OFFICER: CATHERINE LEARY
TITLE OFFICER: JIM WHITE

PROPERTY OWNER:

THOMSON LEARNING, INC.

SURVEYORS STATEMENT:

TO BRUCE BEAN, TAFTON GROUP, AND NORTH AMERICAN TITLE COMPANY.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2005, AND DOES NOT INCLUDE ANY ITEMS OF TABLE A THEREOF, PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION. UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF CALIFORNIA, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATE: _____

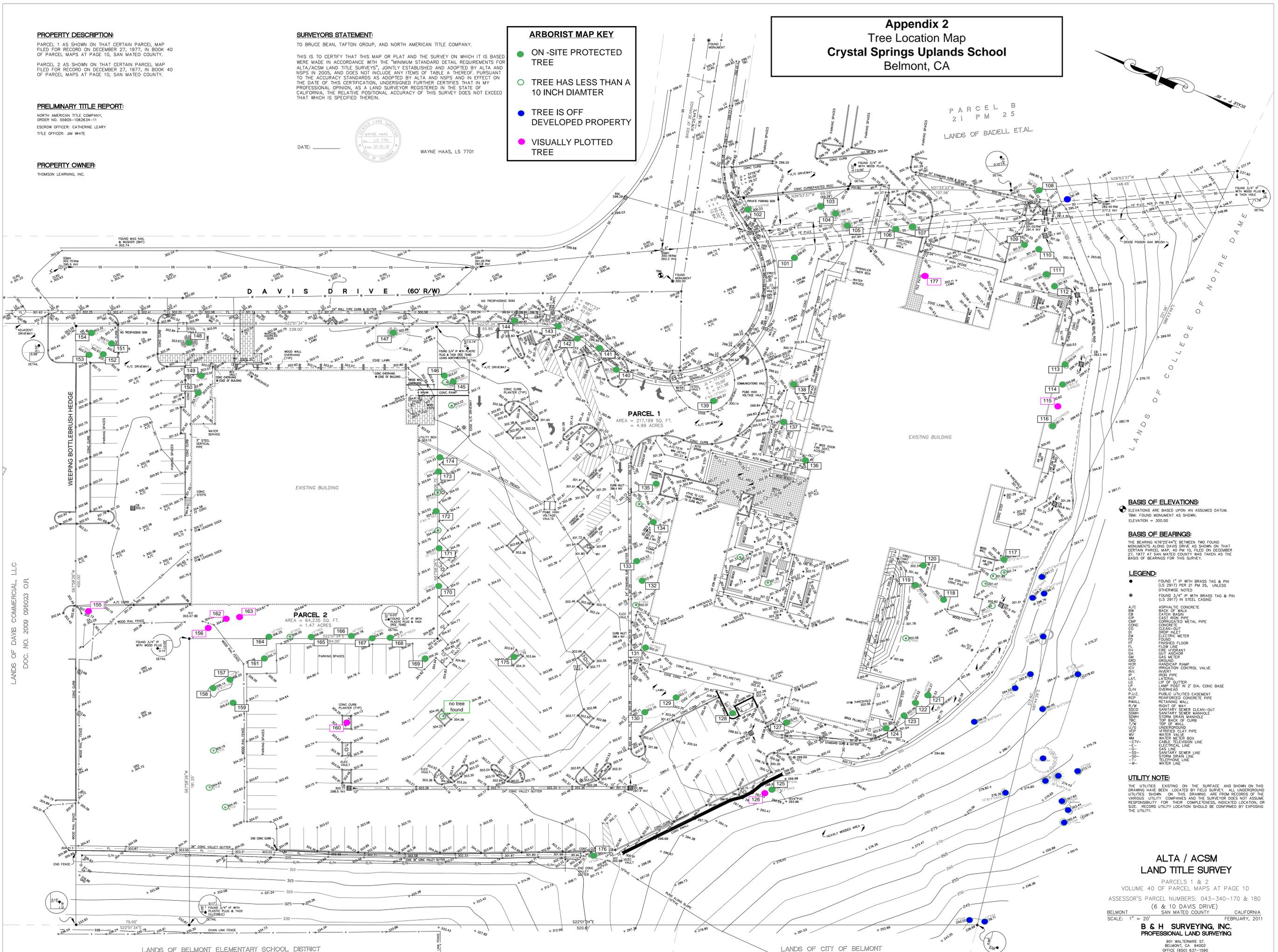
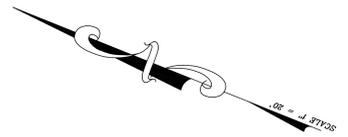


WAYNE HAAS, LS 7701

ARBORIST MAP KEY

- ON-SITE PROTECTED TREE
- TREE HAS LESS THAN A 10 INCH DIAMETER
- TREE IS OFF DEVELOPED PROPERTY
- VISUALLY PLOTTED TREE

**Appendix 2
Tree Location Map
Crystal Springs Uplands School
Belmont, CA**



BASIS OF ELEVATIONS:

ELEVATIONS ARE BASED UPON AN ASSUMED DATUM.
TBM: FOUND MONUMENT AS SHOWN.
ELEVATION = 300.00

BASIS OF BEARINGS:

THE BEARING N76°25'44"E BETWEEN TWO FOUND MONUMENTS ALONG DAVIS DRIVE AS SHOWN ON THAT CERTAIN PARCEL MAP, 40 PM 10, FILED ON DECEMBER 27, 1977 AT SAN MATEO COUNTY WAS TAKEN AS THE BASIS OF BEARINGS FOR THIS SURVEY.

LEGEND:

- FOUND 1" IP WITH BRASS TAG & PIN (LS 2917) PER 21 PM 25, UNLESS OTHERWISE NOTED
- FOUND 3/4" IP WITH BRASS TAG & PIN (LS 2917) IN STEEL CASING
- A/C ASPHALTIC CONCRETE
- BW BACK OF WALK
- CB CATCH BASIN
- CC CAST IRON PIPE
- CM CORRUGATED METAL PIPE
- CONC CONCRETE
- COP CLEAN-OUT
- DI DROP INLET
- EM ELECTRIC METER
- FD FINISHED FLOOR
- FL FLOW LINE
- FX FIRE HYDRANT
- GA GUY ANCHOR
- GM GROUND
- GRD GROUND
- HOR HANDRAIL
- ICV IRRIGATION CONTROL VALVE
- INR INLET
- IP IRON PIPE
- LAT LATERAL
- L/G LIP OF GUTTER
- LAMP LAMP POST IN 2" DIA. CONC BASE
- O/H OVERHEAD
- P.U.E. PUBLIC UTILITIES EASEMENT
- RGP REINFORCED CONCRETE PIPE
- R/W RIGHT OF WAY
- R/W RETAINING WALL
- SSM SANITARY SEWER MANHOLE
- SSM SANITARY SEWER MANHOLE - OUT
- SSM STORM DRAIN MANHOLE
- TBC TOP BACK OF CURB
- TOP TOP OF MANHOLE
- U/C UNDERGROUND
- VCP VITRIFIED CLAY PIPE
- WV WATER VALVE
- WM WATER METER BOX
- TV- CABLE TELEVISION LINE
- E- ELECTRICAL LINE
- G- GAS LINE
- S- SANITARY SEWER LINE
- SD- STORM DRAIN LINE
- T- TELEPHONE LINE
- W- WATER LINE

UTILITY NOTE:

THE UTILITIES EXISTING ON THE SURFACE AND SHOWN ON THIS DRAWING HAVE BEEN LOCATED BY FIELD SURVEY. ALL UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE FROM RECORDS OF THE VARIOUS UTILITY COMPANIES AND THE SURVEYOR DOES NOT ASSUME RESPONSIBILITY FOR THEIR COMPLETENESS, INDICATED LOCATION, OR SIZE. RECORD UTILITY LOCATION SHOULD BE CONFIRMED BY EXPOSING THE UTILITY.

**ALTA / ACSM
LAND TITLE SURVEY**

PARCELS 1 & 2
VOLUME 40 OF PARCEL MAPS AT PAGE 10
ASSESSOR'S PARCEL NUMBERS: 043-340-170 & 180
(6 & 10 DAVIS DRIVE)
BELMONT, SAN MATEO COUNTY, CALIFORNIA
SCALE: 1" = 20' FEBRUARY, 2011

**B & H SURVEYING, INC.
PROFESSIONAL LAND SURVEYING**

601 WALTERS ST.
BELMONT, CA 94002
OFFICE (650) 637-1590
FAX (650) 637-1059

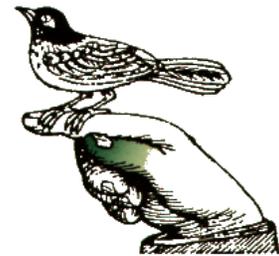
LANDS OF DAVIS COMMERCIAL, LLC
DOC. NO. 2009 090203 OR.

LANDS OF BELMONT ELEMENTARY SCHOOL DISTRICT

LANDS OF CITY OF BELMONT

Attachments

Certification of Performance
and
Terms and Conditions



RALPH OSTERLING
& CONSULTANTS, INC.
1650 BOREL PLACE SUITE 204
SAN MATEO, CA 94402

Certification of Performance

That I have personally inspected the tree(s) and /or property referred to in this report and have stated my findings accurately. The extent of the evaluation and appraisal is stated in the attached report and the Terms and Conditions;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved;

That the analysis opinions and conclusions stated herein are my own and are based on current scientific procedures and facts;

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment the attainment of stipulated results or the occurrence of any subsequent events;

That my analysis opinions and conclusion were developed and this report has been prepared according to commonly accepted Arboricultural practices;

I further certify that I am a Registered Consulting Arborist® by the American Society of Consulting Arborists (ASCA) and a Certified Arborist by the International Society of Arboriculture (ISA).

Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees and recommend measures to enhance the beauty and health of trees and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Certain conditions are often hidden within trees or below the ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specific period of time. Likewise remedial treatments cannot be guaranteed.

Trees can be managed but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to remove all risk from trees is to remove all trees.

Signed: _____ Date: 10/31/11

Walter Fujii



Ralph Osterling Consultants, Inc.
TERMS AND CONDITIONS

The following terms and conditions apply to all oral and written reports and correspondence pertaining to the consultations, inspections and activities of Ralph Osterling Consultants, Inc. hereinafter referred to as "ROC".

1. Any legal description provided to the consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as to the quality of any title.
2. It is assumed that any property referred to in any report or in conjunction with any services performed by ROC, is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, and that any titles and ownership to any property are assumed to be good and marketable. Any existing liens and encumbrances have been disregarded.
3. Possession of this report or a copy thereof does not imply any right of publication or use for any purpose, without the express permission of the consultant and the client to whom the report was issued. Loss, removal or alteration of any part of a report invalidates the entire appraisal/evaluation.
4. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. ROC and the consultant assume no liability for the failure of trees or parts of trees, either inspected or otherwise. The consultant assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.
5. No tree described in this report was climbed, unless otherwise stated. We cannot take responsibility for any defects, which could only have been discovered by climbing. A full roots collar inspection, consisting of excavating the soil around the tree to uncover the root collar and major buttress roots was not performed unless otherwise stated. We cannot take responsibility for any root defects, which could only have been discovered by such an inspection.
6. The consultant shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal/report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by the consultant or in the fee schedules or contract.
7. ROC offers no guarantees or warranties, either expressed or implied, as to the suitability of the information contained in the reports for any purpose. It remains the responsibility of the client to determine applicability to his/her particular case.
8. Any report and the values, observations, and recommendations expressed therein represent the professional opinion of the consultants, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any particular finding to be reported.
9. Any photographs, diagrams, graphs, sketches, or other graphic material included in any report, being intended solely as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys, unless otherwise noted in the report. Any reproductions of graphs material or the work produce of any other persons is intended solely for the purpose of clarification and ease of reference. Inclusion of said information does not constitute a representation by ROC or the consultant as to the sufficiency or accuracy of that information.
10. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.
11. Payment terms are net payable upon receipt of invoice. All balances due beyond 30 days of invoice date will be charged a service fee of 1.5 percent per month (18.0% APR). All checks returned for insufficient funds or any other reason will be subject to a \$25.00 service fee. Advance payment of fees may be required in some cases.

DRAFT



Walter Levison
CONSULTING ARBORIST



PNW-ISA Certified Tree Risk Assessor #593

ASCA Registered Consulting Arborist #401

ISA Certified Arborist #WC-3172

Assessment of and recommendations for 86 protected trees
at
8 & 10 Davis Drive
Belmont, California

Prepared at the Request of:

Damon DiDonato, Senior Planner
Planning and Community Development Department
1 Twin Pines Lane, Suite 310
Belmont, CA 94002

Site Visit:

Walter Levison, Contract City Arborist (CCA)

11/17/2011

Report:

(CCA)

11/22/2011

DRAFT



Walter Levison
CONSULTING ARBORIST



PNW-ISA Certified Tree Risk Assessor #593

ASCA Registered Consulting Arborist #401

ISA Certified Arborist #WC-3172

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Attached: Tree data charts by Ralph Osterling Consultants (modified by WLCA 11/22/2011)



1 Assignment and Background

Walter Levison, Contract City Arborist (CCA), otherwise known as "WLCA", was requested by Mr. Damon DiDonato, Senior Planner, to assess and comment in writing on protected trees previously tagged, assessed, and located by Ralph Osterling Consultants (ROC) for the property known as 8 and 10 Davis.

The author (WLCA) visited the site on 11/17/2011 to verify tree species and overall condition ratings.

WLCA plotted tree trunk locations onto the proposed utility plan sheet dated 10/14/2011 by AMS Associates or Orinda, CA.

WLCA tagged, assessed, and added to the ROC tree data charts nine (9) trees threatened with site plan impacts. These trees are shown on the WLCA tree location map mark-up in this report. Border trees in the dense forest areas south of these additional trees were not surveyed, and will need to be assessed by the applicant's arborist ROC.

WLCA corrected a few species identification errors in the ROC arborist report data charts, and added six (6) columns to the right hand side of the data charts:

1. Removal Per Site Plan
2. Potential Transplant Candidate
3. Expect Site Plan Impacts
4. Suggested Site Plan Adjustments (to optimize tree root zone preservation and long term tree survival).
5. Protection and Maintenance Codes
6. Tree Removal Fee (per 2011-12 master fee schedule)

As noted above, I have included suggested protection and maintenance items in the tree data charts and in this report that are to be initiated prior to commencement of site plan work. This document is therefore a valuable tool for Staff and for site contractor(s) as a reference for all tree maintenance and protection needs.

I have also included a matrix below which illustrates the tree situation in relation to proposed site plan work. This matrix is a quick reference for Staff and for the Project Team.

Full recommendations for maintaining and protecting individual trees are found in the mitigation section of this report. These are designed to guide planning department staff and planning commissioners throughout the decision-making process, as well as provide written documentation for contractors involved with tree preservation measures for this site. These mitigation items are considered the planning division conditions of project approval (COA), and will be deemed so if itemized by Staff in the official Staff report for this project and approved by commission vote.

Tree protection inspections will be performed by the CCA before, during, and after initiation of the site plan project (at the discretion of the planning director). The demolition, grading, and building permits will not be issued without prior city arborist inspection and approval of site tree protection measures.

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2 Summary

2.1 Tree Disposition Matrix

Item	Total Number of Trees	Tree Tag Numbers	Removal Fees (if removed)
Protected trees total.	86	Trees #101 through #186	
Protected trees to be removed per site plan.	70	All trees except for seven (7) trees #156, 159, 160, 162, 163, 176, 177 (if transplanted), and nine (9) trees #178 through #186 to be retained.	\$122,330
Transplant candidates.	7	#156, 159, 160, 162, 163, 176, 177.	\$14,284.
Trees being retained that require protection and maintenance.	9	#178 through #186	\$34,776.
Total Potential Fees			\$171,390
Landscape Planting Security Deposit required for site plan work involving removal of more than 5 protected trees.			\$ (to be determined)

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2.2 Impact Mitigation Matrix

Impact Expected	Trees Tag Numbers Affected	Suggested Mitigation
Path, west side of amphitheater	#176, 180	<p>Realign proposed path to avoid canopies of trees and maintain at least 12 linear feet radius from #176 and 180.</p> <p>Note: Tree #176 may be transplanted.</p>
ADA Ramp, east side of amphitheater	#181	Realign proposed ADA ramp to at least 12 linear feet radius from the trunk of #181.
Cafeteria footprint	#178, 179	Install tree protection zone chain link fence (TPZ) at canopy driplines of trees #178, 179 which extend over the existing asphalt area.
Asphalt roadway extension with low defensible space wall.	#182, 183, 184, 185, 186	<p>Work with CCA to adjust location of new wall and limit use of machinery under existing oak canopy driplines which overhang the existing gravel driveway.</p> <p>Perform root crown excavations and fill soil removal by hand using hand shovels and wheelbarrows along the north sides of the trunks of these five (5) trees. The root zones of these trees are currently buried beneath years of illegal fill soil and landscape waste dumping off the edge of the existing gravel driveway.</p>
Landscape Plan / Defensible Space Plan	Existing native oaks, willows, and shrubs ringing the south side of the site (somewhat inaccessible at the time of writing).	Scale back the scope of the proposed landscape plan such that new plantings are constrained to the previously developed areas of the site. If possible, avoid large scale planting and irrigating in the wild southern boundary (existing sloping areas) between trees #176 and #108



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CONSULTING ARBORIST



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		(cont.) Determine if we can create a defensible space that would allow for retention of existing native shrubs and native trees along the south border areas.
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2.3 Monitoring Fees

The applicant will need to deposit an arborist monitoring fee plus a 30% administration fee per City requirement, prior to issuance of permits. The arborist fee is the contract rate for monitoring construction and preparing monthly reports for the nine (9) trees #178 through 186 expected to be retained and protected at the site in close proximity to the work area as delineated on the current site plan resubmittal. The CCA will also need to monitor tree transplanting work, and installation of landscaping.

Total fee: TBD.

2.4 Landscape Plan Issues

The applicant has submitted a landscape plan dated 10/14/2011 by Andrea Cochran Landscape Architecture of San Francisco, California. I shall refer to this firm as the "LA".

Issues:

- a. Classroom Building Turnaround: The LA's plan shows tree type II *Ginkgo biloba* for the turnaround area. This tree species is quite slow growing. See WLCA's information below regarding potential alternative tree species for this site.
- b. East corner & Amphitheater Surround: The author did not survey existing plant materials in the east corner of the property. It appears to be a native coastal scrub with native coastal sage and coyote brush. Removal of these materials and installing tree type III per the landscape plan may constitute a significant loss of native habitat.

There is a native willow forest that ROC and WLCA did not survey, located just downhill from the proposed amphitheater and deck. This existing native moist forest area (depression) is shown on the landscape plan as to be installed with type III plantings.

The LA's proposed type III trees include native coast live oak and blue oak.

I would suggest eliminating use of very slow growing blue oak on this site, as it is more adapted to hotter areas such as Los Altos Hills. Also, note that typical coast live oak stock in the Northern California nursery trade is often girdled and doomed to poor performance due to the girdling roots. Buy from one of WLCA's preferred vendors to ensure good quality root stock (e.g. Specialty Oaks of Lower Lake, CA).



Installation of any new plants or trees in the existing native willow forest and adjoining native coastal scrub area is considered a significant negative impact, and does not make any sense, given that it would involve removal of existing established native trees and plants, and replacing them with other native tree and plant species that would then need to be established and maintained for decades to reach the density and wildlife value already achieved by the existing historic natural landscape.

I do understand that wildland/urban interface fire concerns may supercede wildlife concerns in this situation. However, this does not negate the fact that a significant negative biological impact will occur as a result of the proposed site plan work. Note also that the south ends of the property abut up against the City's Water Dog Lake property, acting as an important native species "buffer zone" for the Water Dog Lake area.

c. South side of site groundcover:

The LA's plan shows installation of planting type IV (*Ceanothus* or *Ribes*) throughout the native coast live oak forest and native coastal sage and coyote brush scrub areas ringing the south half of the site.

Installation of new plantings may have a severe negative effect on existing native tree root systems if irrigation is proposed to be installed using trenched-in piping. Even if new irrigation is supplied with emitter tubing, this irrigation may by itself constitute a significant or severe negative impact due to the fact that it would change the soil moisture regime from native dry summer type to moist summer type, effectively allowing soil borne pathogen growth which could cause decline and/or death of native oaks and other native tree and shrub species.

I suggest that a survey of existing shrubs and trees in this "border zone" of the property be conducted, and the landscape plan be modified to allow for retention of as much of the existing materials as possible.

d. Frontage Areas:

The LA proposes three (3) species for tree type IV "non-pyrophytic" vegetation for the frontage areas of the property that will be planted and visible along Davis Drive. This includes the front parking lot and the semi-circular turnaround in front of the classrooms building.

The three tree species proposed by the LA are red maple (*Acer rubrum*), white alder (*Alnus rhombifolia*), and California sycamore (*Platanus racemosa*). All three of these species have issues that are of concern to consulting arborists:

- Red maple is extremely sensitive to drought conditions, and requires very heavy irrigation. This is the type of tree accustomed to east coast "monsoon" conditions. i.e. summer rains and humidity. I would not recommend this tree for our frontage.
- White alder is susceptible to boring beetles and various disease pathogens, and is considered a primary riparian colonizing species that is very fast growing and short-lived. The tree is designed to grow in riparian corridors (i.e. creekside) with good drainage and high moisture. Again, not a good choice for our frontage.



- California sycamore is a very large riparian tree also adapted to high soil moisture conditions, and is best used for native plant restoration projects in the Sacramento delta area. It is susceptible to a myriad of pests and diseases.

WLCA suggests instead using some of the following proven performer species for this area (note fire resistance ratings from various sources, if fire-resistance is required):

Species	Fire Resistant?
Wilson's fruitless olive (<i>Olea wilsonii</i>)	Yes
Water gum (<i>Tristania laurina</i> 'Elegans')	Yes
Columbia plane tree (<i>Platanus</i> 'Columbia')	Yes
Italian oak (<i>Quercus frainetto</i> 'Forest Green') 24" box currently available at www.oraclenursery.com \$130.	Not verified
African fern pine (<i>Podocarpus gracillior</i>)	Not verified
Trident maple (<i>Acer buergeranum</i>)	Not verified
Atlas cedar (<i>Cedrus atlantica</i> – the green one, NOT blue atlas cedar)	No
Deodar cedar (<i>Cedrus deodara</i>)	No

3 Protected Trees

Protected trees are defined in the new 2011 Belmont tree ordinance as all trees with trunk diameter(s) totaling 10 inches or greater at 4.5 feet above grade.

There are no exceptions for junk species or poor tree condition for trees situated on land proposed for development/entitlements.

Removal of any protected tree (10 inches and greater in diameter , single or multi-stem total) requires a removal fee based on the chart in the City's 2011-12 Master Fee Schedule.

In addition, removal of protected trees may or may not require mitigation at up to a 3:1 ratio using 15 gallon or 24" box size native oaks or other approved species, or an in-lieu fee of up to (\$497X3 plantings=\$1,491) per single protected tree removed, at the discretion of the planning commission.



4 City of Belmont Master Fee Schedule 2011-12

**CITY OF BELMONT
MASTER REVENUE SCHEDULE
EFFECTIVE JULY 1, 2011**

8. TREE REMOVAL FEES- DEVELOPMENT PROJECTS OR GENERAL PROPERTY MAINTENANCE

Tree removal fees are assessed for the removal of trees required for the development or general maintenance of property. They are collected to mitigate the loss of trees from the City's tree population. Fees are deposited in the City Tree Planting and Establishment Fund.

FEE BASIS:

<u>Tree Size (DBH)</u>	<u>Protected Trees</u>	<u>All Other Species</u>
24" or greater	\$4,968	\$2,484
18" but less than 24"	\$3,725	\$1,241
10" but less than 18"	\$2,484	\$932
6" but less than 10"	\$1,241	\$621
Less than 6"	No Fee	No Fee

NOTES:

- Protected Trees as defined in Chapter 25 of the City Code include: Oaks (all species), Bay, California Buckeye, Monterey Cypress, Coast Redwood, Giant Sequoia and Madrone.
- All Other Species include all other trees except: Acacia (all species), Eucalyptus globulus, Eucalyptus globulus "Compacta" and Monterey Pine.
- Tree size is defined by diameter at breast height (DBH), which means the diameter (at the widest point) of the tree trunk measured at 4.5 feet above natural grade. In the case of multiple stemmed trees, the measurement shall be the sum of the diameter of all stems measured at DBH.
- Payment shall be made prior to the issuance of a grading permit. If no grading permit is required, payment shall be made prior to the issuance of a building permit. If no building permit is required, payment shall be made prior to removal of any protected tree.

9. TREE PLANTING IN-LIEU FEES - DEVELOPMENT OR GENERAL MAINTENANCE PROJECTS

When a requirement to plant trees on the subject property cannot be met, the applicant shall pay a tree planting in-lieu fee to the City Tree Planting and Establishment Fund.

FEE BASIS:

<u>Size of Tree to be Planted</u>	<u>In-lieu Fee</u>
24" Box	\$497

10. PUBLIC NOTICE FEE

\$285



5 Observations & Discussion

ROC arborist report

The arborist report by ROC did not cover border trees affected by proposed site plan work at the east corner and south side. Therefore, WLCA added trees #178 through 186 to partially assess proposed impacts from site plan work. ROC will need to tag, locate, and assess trees south of tree #110, and south of trees #180 and 181 (e.g. willows, etc.) to fully determine expected site plan project impacts on the native forest.

Note that the images of trees on page 36 of the ROC report are not correct. The two images on that page are actually trees #176 and 177, not 175 and 176 as noted on the images.

Also note that some site trees shown on the ROC tree data table 3 as “Italian stone pine” are actually Monterey pine (*Pinus radiata*). Also, all “*Eucalyptus cladocalyx*” in ROC data table 3 are actually *E. rudis*: a species which is highly undesirable due to its extreme susceptibility to red gum lerp psyllid insect feeding which is currently occurring. WLCA edited the data cells to reflect these species ID inaccuracies. *Eucalyptus rudis* was identified by Mr. Fred Hrusa, head taxonomist at the California Department of Agriculture.

Landscape Plan

As noted above in section 2.4 of this report, the proposed landscape plan affects areas that are currently covered with native scrub and trees, including coastal sage, coyote brush, and native willow. The author did not survey down into these boundary areas due to poison oak and other inaccessibility issues.

The area is already thriving and mature with practically 100% ground coverage of natives that are of high wildlife value and require no establishment period, no water, and no maintenance.

I suggest that the plan be reworked to allow for retention of existing native plant materials ringing the south side of the site, as long as the existing situation conforms to new regulations regarding defensible space and fire prevention (pyrophitic ratings of all existing shrubs and trees not verified at the time of writing).

Defensible Space Plan

The DSP by Andrea Cochrane Landscape Architect dated 10/14/2011 shows a 30-foot wide green zone entitled “fire modification zone B” inside which only fire-resistive plants are allowed. This area is proposed to be “irrigated”.

Note that the green zone extends through the existing native coast live oak forest of trees #181 through 186 and other non-surveyed oaks down slope from this grouping. It also extends through an existing native willow forest located just downhill from the proposed amphitheater and deck area.

As noted above regarding the proposed landscape plan, this DSP if approved would require that existing native coastal scrub areas and existing native tree species forest areas be modified in terms of both species removal and soil moisture regime to create defensible space for fire protection. Most of the existing native plants may need to be removed (not verified). Any remaining trees and shrubs would likely be damaged due to alteration of the natural dry summer type soil moisture regime required by these plants and trees (irrigation of native coastal scrub and forest may cause an increase in presence of soil borne pathogens that thrive in the moist conditions



created by supplemental water in the landscape, possibly resulting in decline or death of the coast live oaks and other species).

Coast live oak is considered fire resistant, and should be kept intact at most or all locations of the urban/wildland border of this property. WLCA will work with the project team to retain as much native oak value on this site as possible.

Gravel Road / Dumping

The existing gravel road at the south end of the site abuts up against an existing native coast live oak forest of trees #181 through 186, and additional unsurveyed oaks downhill from this grouping (see tree location map).

WLCA observed that illegal dumping of old landscape materials and soil has occurred over many years along this south side of the site. The gravel road south edge exhibits a very large volume of fill soil that needs to be removed by hand using hand shovels and wheelbarrows to reestablish original soil grade elevations around these oaks. Each oak will also require a root crown excavation to unbury the natural trunk flare at the base of trunk (see images below, this report).

Transplanting

Transplanting is best performed when a tree is a high value species (oaks, etc.), of relatively small diameter, and of good overall condition rating (70% or greater). The trees recommended for potential transplanting by ROC in their arborist report are in general good candidates. Some or all of the trees could be transplanted.

Swale

The proposed swale or v-ditch on the west side of the site will destroy coast live oak #176. This tree will need to be transplanted if the swale is built as proposed. If the swale / v-ditch can be realigned, this tree may be retainable.

Existing Site Trees

The developed portion of the site contains mainly non-native tree specimens in poor to fair overall condition.

The developed portion does contain some native coast live oaks and other smaller specimens of tree species in good overall condition that could be considered for transplanting as noted above in this section.

6 Synopsis / Conclusion

The site proposed for Crystal Springs Uplands School exhibits 86 protected trees in and adjacent to the developed area, 70 of which will be removed. Most of these protected trees are non-native species in poor to fair condition. The removal fee for these 70 trees will be \$122,330. City Council may or may not also require up to 3:1 mitigation for loss of these 70 trees, using 15 gallon and 24" box size mitigation plantings. In-lieu fees can be used in lieu of required mitigation plantings, if no space on site exists for the required number of plantings.



In addition to the 70 removals, seven of the total 86 trees appear to be good or moderate transplant candidates, most of which are native coast live oaks of relatively small diameter. The tree removal fee for these transplant candidates (if removed) is \$14,284.

Approximately nine trees (eight of which are coast live oaks) of the total 86 initially appear to be retainable if certain site plan adjustments are made to accommodate reasonable root zone retention behind chain link tree protection zone fencing. The tree removal fee for these trees (if removed) is \$34,776. Waste and fill soil in this area at the south end of the site will need to be removed by hand using hand tools to reestablish original soil grade elevations and increase oxygenation of the root zone.

An unknown number of as-yet unsurveyed protected size native oaks and willows will be affected by the proposed defensible space plan and landscape plan (e.g. irrigation, tree removal, revegetation with different species, etc.). These areas are shown as 'planting type IV' hatching on the applicant's planting plan, and as (green zone) on the applicant's defensible space plan. The tree removal fees for removal of protected size trees in this southern boundary area are thus also not known at the time of writing. The area is dense, and somewhat impenetrable with steep slopes, poison oak, tall brush, and other hazards. Retention of these trees would require adjustment or alteration of the applicant's proposed defensible space plan, which may have ramifications in terms of wildland/urban interface development compliance with state and local fire regulations. Note that coast live oak is rated as 'resistant' to fire per fire-resistant tree species lists.

Many of the landscape species proposed to be installed in the property frontage area along Davis per the applicant's plan are not species that WLCA would recommend for this coastal-influenced Belmont site. WLCA has suggested a number of alternative species in section 2.4 (d) of this report. Fire resistance ratings are noted in the author's tree species matrix in section 2.4 where available.

7 Suggested Conditions of Approval

Directions to Staff or Contract Staff associated with this project:

Please enter the following into the Belmont CRW PermitTrack file for this project to prevent permit issuance prior to the City Arborist's evaluation of initial tree protection measures at the site:

'STATUS' field: 'HOLD'

'REMARKS' field: 'PENDING INITIAL TREE PROTECTION INSPECTION AND SIGNOFF'

Prior to issuing a permit for grubbing, demolition, tree removal, grading, excavation, or construction, the following must occur:

1. Pre-Construction Meeting between Project Team and Contract City Arborist (CCA):

Prior to finalization of or approval of the plans, members of the applicant's project team shall make an appointment for a pre-construction meeting with the Contract City Arborist and Staff at the Permit Center. The following items are up for discussion:

- a. Tree Protection: CCA will verify fence erection and trunk buffer installation.



- b. Pruning: CCA will discuss with applicant the feasibility of having an ISA Certified Arborist present during pruning of any trees requiring clearance pruning related to the site plan project. The pruning vendor performing work will need to verify that ANSI A300 standards for tree care / tree, shrub, and woody plant maintenance / pruning and transplanting are adhered to. CCA will set up a meeting with the applicant's tree care and transplanting contractor(s) at site to discuss specific limb and branch pruning locations and transplant specifics.

c. Fees:

Verify that tree-related fees are paid:

- i. Monitoring fee (arborist fee) plus 30% administration fee required by the City (dollar amount to be determined) which covers monthly site inspections and letter reports throughout the life of the project from start of work until final signoff, and will need to include monitoring transplanting and landscape tree installation.
- ii. Tree removal fee of \$122,330.
- iii. Mitigation (in-lieu fees) for loss of 70 protected size trees will be up to 70 X (3:1 mitigation) = maximum of 210 plantings (min. 15 gallon size), or 210 X \$497/tree = \$104,370 ,or a combination thereof (per planning commission and Staff decision).

A combination of in-lieu fees and site plantings can be used as mitigation.

- iv. Tree Planting Security Deposit: Post a bond (amount to be determined) with the City in the amount of the value of mitigation tree plantings per requirement in City of Belmont tree ordinance section 25.07(D).
- v. Impacts: Verify that the project team understands that the CCA will determine prior to final occupancy permit issuance if certain tree specimens were negatively impacted by site plan construction activity to the degree that a damage fee would be required to be paid in the amount of partial or full tree removal fees plus in-lieu fees as applicable.

d. Water for Transplants:

Determine if there is a way to activate a standard pressure water source at site for temporary irrigation of site trees being transplanted.

e. Staging/Storage/Ingress/Egress:

Identify all staging, storage, and ingress/egress areas. These must all be outside of the delineated TPZ fence perimeters protecting trees to be retained.

f. Landscape and irrigation:

Verify whether we can amend the proposed defensible space plan and the proposed planting plan to allow existing native oak and willow trees along the south perimeter of the property (undeveloped portion) to remain as-is.



g. Hand Work:

Verify that hand shovel and wheelbarrow work will be performed to remove historical fill and landscape wastes dumped over the south edge of the existing gravel driveway at the south side of the property. The slope elevations need to be reestablished as original grades such that the root zones of oaks #182 through #186 are more adequately oxygenated: a critical factor in long term tree vigor. The root crowns of these trees will also need to be excavated under the direct monitoring by an ISA Certified Arborist to unearth the flares at the bases of the trunks.

h. Work Limits and Adjustments:

Verify whether adjustments to the final site plan can be made to increase lateral separation between proposed construction items and south side trees. These items include:

- i. Elimination of the proposed swale / v-ditch which if built as proposed will destroy coast live oak #176.
- ii. Elimination or realignment of the proposed low wall which cuts through the root zones of trees #182 to #186. The wall may still be able to be built as proposed if we use a 2-person breakdown type drill rig to dig piers, and then build the wall as an over-grade beam wall supported on piers with no linear excavation required.
- iii. Adjust the proposed path route shown meandering between oaks #176 and #180 to allow both trees to remain.
- iv. Adjust the location of the proposed ADA ramp which encroaches too close to the trunk of oak #181.

2. Additional Tree Survey:

The applicant's arborist consultant ROC shall revisit the site to tag, locate on a site plan sheet, and assess all protected size trees along the sloping southern border out to the property line of the subject site which appear to be removed or impacted by the proposed defensible space plan "green zone" south of trees #108 through 116 and south of trees #180 and 181*.

*Access into this area is currently very difficult due to constraints such as steep topography, tall brush, and poison oak. The applicant's project team may need to remove brush and poison oak to allow tree surveyors access to this area (if pre-project brush clearance is allowable per state and local codes).



3. Trunk Buffer:

Trees #176 (if retained in-situ), and #180 through 186 shall be supplied with trunk buffers covering the exposed lower trunks between grade elevation and approximately 8 feet above grade (or the lowest scaffold limbs). The buffer shall consist of orange plastic wrapped approximately 20 times to create a layer 2 inches thick (a single large tree uses up to 1 or 1.5 rolls of orange plastic fencing material).

Place 2X4 wood boards over the buffer, standing up side by side around the entire trunk circumference. Secure with duct tape or rope, or continue wrapping orange plastic over the wood boards and affix with UV resistant zip-ties. Do not use wires.



4. Tree Protection Fencing:

Chain link

Install chain link fence per locations determined during the pre-construction meeting. Fencing material used for all protective fences must be steel chain-link, at least five-feet in height, mounted on two-inch diameter galvanized iron posts 6-feet in length, driven a minimum of 24-inches into the ground. Posts for post and hook fencing must be mounted no wider than six-feet apart. This fence must be erected prior to any heavy machinery traffic or construction material arrival on site.

Silt fence with built-in stakes (e.g. TENAX) shall be installed per package directions for the TPZ fencing to be installed uphill from trees #180 through 186 to prevent materials migration downhill during construction.

Install straw wattles along the bottom edge of the silt fence and pound wood stakes into the wattles to secure them at the base of the silt fence for added protection for the TPZ root preservation areas.

Fencing locations shall be per final determinations in the field during the pre-construction meeting between the general contractor and the CCA at site.

Trees #178 and 179 can be fenced with chain link panels mounted on moveable footings wired together instead of steel posts and rolled chain link.

Compliance inspections will occur (1) at the time of fence erection (2) approximately once monthly during grading





and construction, and (3) after construction is complete. All fencing must remain in place until all construction is completed and the fencing and other protection has received a final signoff letter from the contract city arborist at the end of project. Permit approval will not occur until after the first inspection has been performed and the protection measures are approved by the city arborist.

The protective fencing must not be temporarily moved during construction. No materials, tools, excavated soil, liquids, substances, etc. are to be placed or dumped, even temporarily, inside the TPZ/CRZ.



No storage, staging, work, or other activities will be allowed inside the TPZ.

5. Signage:

The TPZ fencing shall have one sign affixed with UV-stabilized zip ties to the chain link at eye level for every 15-linear feet of fencing, minimum 8"X11" size each, plastic laminated or otherwise waterproofed, stating:

TREE PROTECTION FENCE

DO NOT MOVE OR REMOVE WITHOUT AUTHORIZATION FROM
WALTER LEVISON, CONTRACT CITY ARBORIST (CCA)

CALL OR EMAIL 48-HRS ADVANCE FOR PERMISSION

Cell (415) 203-0990 <drtree@sbcglobal.net>

6. Root Pruning:

If any woody roots measuring 2 inches diameter or greater are encountered during site work such as retaining wall excavation or pier drilling near trees being retained, stop site plan work and call a qualified tree care contractor to prune roots at right angles to the root growth direction, using sharp tools such as an A/C powered Sawzall, lopper, professional pruning saw, etc. If roots are required to be left exposed for more than 24 hours, then cover with 6 layers of wet, muddy burlap. If possible, cover the root(s) completely with existing site soil and irrigate thoroughly to saturate. Cover the soil with wood chip mulch. See image at right for





example of correct root pruning.

Call the CCA at cell 415-203-0990 immediately upon encountering the roots (prior to pruning) so that digital images of the root locations, depths, and densities can be archived.

7. Pier Drilling Equipment Under Oaks:

Use a portable 2-man drill rig ("breakdown drill rig") for defensible space wall pier drilling (if required).

The image at right shows a typical breakdown-type drill rig that has a lower airspace requirement than most larger rigs. This allows it to be used easily under trees with little or no clearance pruning required.



8. Fill Soil Removal & Root Crown Excavation:

As noted in condition #1, it is suggested that fill soil be removed by hand using hand shovels and wheelbarrows to reestablish original grade just north of oaks #182 through 186.

An ISA-Certified Arborist will need to perform root crown excavations per arboriculture standards around the bases of the above-noted five (5) trees to reestablish original grade using dull rounded hand tools in conjunction with the fill soil removal work.

9. Transplants:

Retain a qualified transplanting contractor such as Tree Movers, Inc. of Mountain View, to perform transplanting of trees, per current ANSI-A300 transplanting standards.

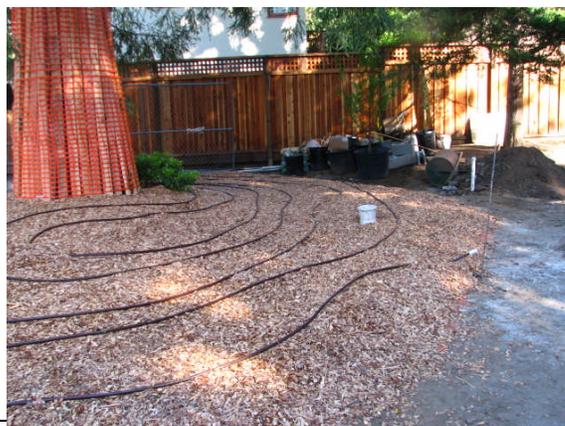
Set up portable irrigation on-site to maintain good soil moisture for the transplant specimens.



10. Irrigation Temporary:

Transplanted trees will need to be regularly irrigated during an "establishment period" of duration to be determined, using a portable water supply such as a tow-behind tank with spray apparatus.

The CCA will check soil moisture using a Lincoln probe on a once monthly basis to determine if relative soil moisture levels are adequate for proper cultural care of various individual site trees. Irrigation adjustments may be required depending on these monthly probe readings.





11. Pruning:

Retain a qualified ISA-Certified Arborist to perform pruning per current ANSI-A300 standards on an as-needed basis (e.g. trees #178 and 179).

12. Tree Installations:

Consider installing some or all of the author's suggested tree species as noted in section 2.4(d) of the WLCA arborist report, instead of the applicant's proposed white alder, California sycamore, or red maple.

13. Site Plan Adjustments:

As noted in condition #1:

Realign the proposed swale / v-ditch, if possible, to avoid destroying tree #176 and avoid necessitating transplant.

Adjust the proposed path near the proposed amphitheater to avoid damaging the root zone of oak #180.

Adjust the proposed ADA ramp near the proposed amphitheater to avoid damaging the root zone of oak #181.

Realign or design the proposed defensible space wall such that excavation and pier drilling near oaks #182 through 186 is avoided or severely limited.

8 Consultant's Qualifications

- Contract Project Arborist, Hetch Hetchy Water Service Improvement Program (WSIP)
San Francisco Public Utilities Commission
10/10-present
- PNW-ISA Certified Tree Risk Assessor #593
- PNW-ISA Certified Tree Risk Assessor Course graduate, 2009
Vancouver, B.C., Canada
- ASCA Registered Consulting Arborist #401
- Millbrae Community Preservation Commission (Tree Board)
2001-2006
- ASCA Arboriculture Consulting Academy graduate, class of 2000
- ISA Certified Arborist #WC-3172
- B.A. Environmental Studies/Soil and Water Resources
UC Santa Cruz, Santa Cruz, California 1990



- ❑ Peace Corps Soil and Water Conservation Extension Agent
Chiangmai Province, Thailand 1991-1993
- ❑ Associate Consulting Arborist
Barrie D. Coate and Associates
4/99-8/99
- ❑ Contract City Arborist to the City of Belmont Department of Planning and Community Development
5/99-present
- ❑ Continued education through attendance of arboriculture lectures and forums sponsored by The American Society of Consulting Arborists, The International Society of Arboriculture (Western Chapter), and various governmental and non-governmental entities.

(My full curriculum vitae is available upon request)

9 Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised and evaluated as through free and clean, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinance, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Unless required by law otherwise, the possession of this report or a copy thereof does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initiated designation conferred upon the consultant/appraiser as stated in his qualifications.

This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by engineers, architects, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by Walter Levison to the sufficiency or accuracy of said information.

Unless expressed otherwise:

- a. information contained in this report covers only those items that were examined and reflects the conditions of those items at the time of inspection; and
- b. the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

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Walter Levison
CONSULTING ARBORIST



PNW-ISA Certified Tree Risk Assessor #593

ASCA Registered Consulting Arborist #401

ISA Certified Arborist #WC-3172

Loss or alteration of any part of this report invalidates the entire report.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate the trees.

10 Certification

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signature of Consultant

11 Approved Vendors List 2011

Service	Company	What they offer	Contact
Transplanting	Tree Movers Inc.	Large specimen trees, transplant services.	650-968-6117
Pruning	Advanced Tree Care	Pruning, root crown excavation, fertilization, tree installation, support systems for high risk trees, SOD phosphate sprays.	650-839-9539
	Maguire Tree Care	Pruning performed directly by an ISA Certified Arborist	650-245-2620

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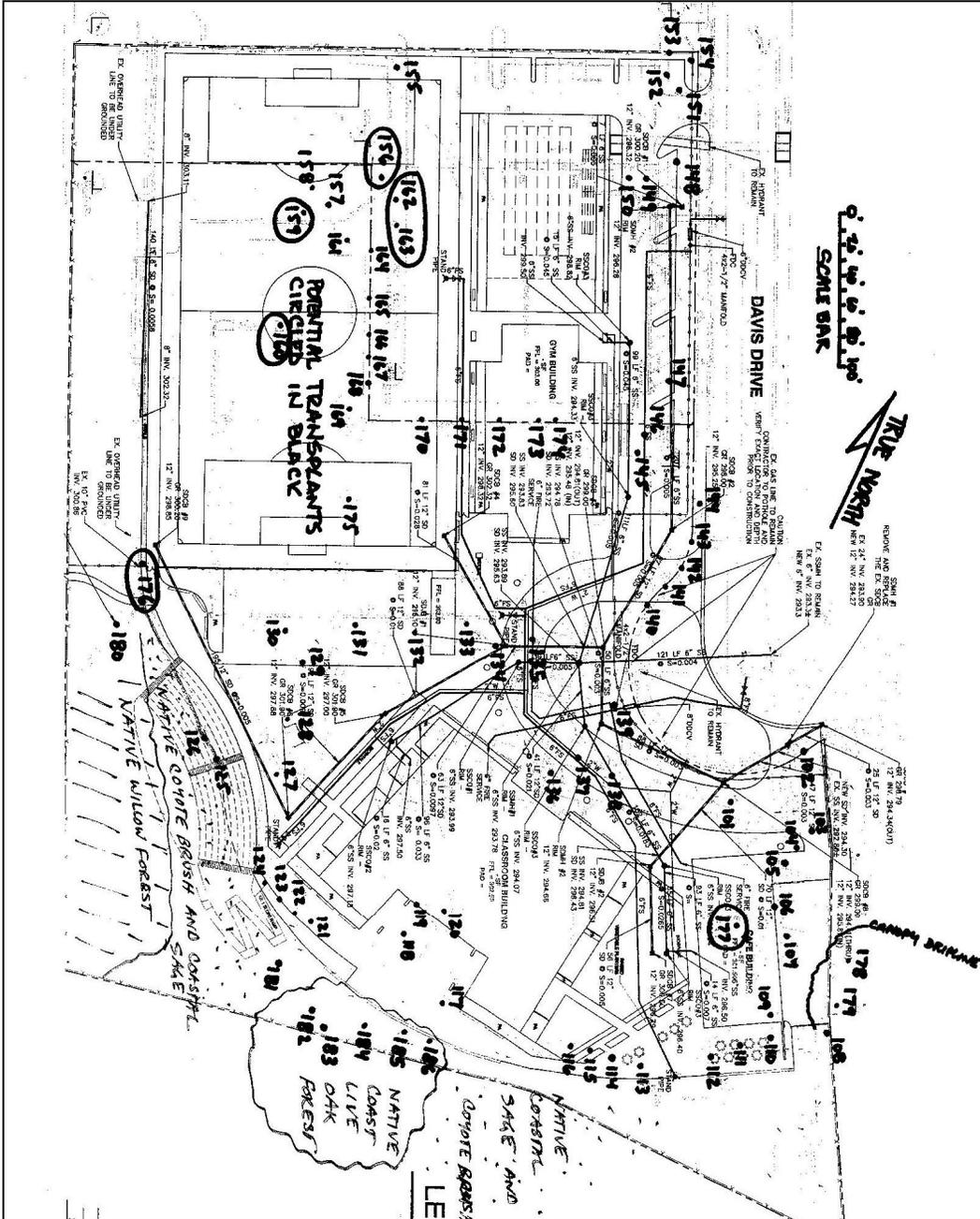
ISA Certified Arborist #WC-3172

Tree Sources	Specialty Oaks, Lower Lake, CA	California native oak species	www.specialtyoaks.com
	Oracle Nursery	Various oaks and hybrid elms. Only local purveyor of hard to find Italian oak (<i>Q. frainetto</i> 'Forest Green')	www.oraclenursery.com
	Calaveras Nursery (the one in Valley Springs)	Large selection of rare and hard to find oak species for drought type situations.	1622 Hwy. 12 Valley Springs, CA 95252 Tel: 209/772-1823 Fax: 209/772-0864
	Oaktopia	Large selection of rare and hard to find oak species for drought-type situations	www.oaktopia.net



12 Tree Map Scan

Dashed Line Tree Protection Zones or "TPZ": (To be determined during pre-con meeting at site)





13 Images



Coast live oak #178 overhanging into the existing parking lot where the proposed cafeteria will be located.



Monterey pine #179 also overhanging into the existing parking lot where the cafeteria will be situated.



Looking west along the gravel driveway which acts as the south border of the property. The trees in the center of image comprise the native coast live oak forest consisting of trees #181 through #186, plus other coast live oak specimens downhill that were not included in my extension of the ROC survey.

Note that the oaks overhang the existing driveway where a low wall is proposed to be built. There is no way to install a wall here without significant oak canopy pruning and possibly oak root system severing for wall foundation footings, unless a pier and on-grade beam wall can be built using small equipment such as a 2-person breakdown drill rig.



Native willow forest located just downhill from the proposed amphitheater and deck. This high value wildlife area is shown on the landscape plan as being demolished and replanted with other native species to create a green zone or "fire modification zone B" consisting of fire resistive plants and irrigation.

WLCA did not survey this area, as it is almost impenetrable with numerous protected size willows and poison oak, etc. It is suggested that the applicant have the project team clear brush and poison oak to allow their arborist ROC to tag, locate, and assess protected size trees in this border area.

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CONSULTING ARBORIST



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Center of image: Protected coast live oak #180 which may or may not be removed under the current proposed landscape plan.



Looking east at protected coast live oak #181 which will be impacted by the proposed ADA ramp if built as proposed.



Protected coast live oak #182 to be retained.

This tree has been negatively impacted by persons dumping fill and waste materials over the root zone, causing the root crown to become buried. I suggest reestablishing original grade around the tree by use of hand tools such as shovel and wheelbarrow which will increase oxygenation of the shallow root system and likely increase tree vigor over time.



Protected coast live oak #183 to be retained (same issues as noted for tree #182 at left).



Protected size coast live oak #184 (same issues as tree #182 above).



Protected size coast live oak #185 (same issues as tree #182 above left).



Protected size coast live oak #186
(same issues as tree #182 above left).

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Tree Assessment Chart
 Ralph Osterling Consultants (ROC) + Walter Levison Consulting Arborist (WLCA)
Crystal Springs Uplands School
 Belmont, CA

Tree Tag #	Trunk Diameter	Trunk Diameter	Trunk Diameter	Trunk Diameter	Total Sum of Trunk Diameters	Common Name	Botanical Name	Structure	Health	Overall Condition Rating (0 to 100%) by WLCA	Protected Tree	Suitability	Comment 1	Comment 2	Comment 3	Removal Per Site Plan (WLCA)	Potential Transplant Candidate	Expect Site Plan Impacts (WLCA)	Suggested Site Plan Adjustments (WLCA) (R)oads/paths, (U)tilities, (F)ootprint, (G)radling.	Protection and Maintenance Codes (WLCA)	Tree Removal Fee per 2011-12 Fee Schedule (WLCA)	
101	19.2				19	Chinese elm	<i>Ulmus parvifolia</i>	Poor	Fair	60%	Yes	Low	Branch cavity	Sparse canopy		X						\$ 1,241
102	21.9				22	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	60%	Yes	Mod	Dense canopy			X						\$ 1,241
103	29.4				29	Monterey pine	<i>Pinus radiata</i>	Fair	Fair	50%	Yes	Mod	Shared canopy			X						\$ 2,484
104	38.3				38	Monterey pine	<i>Pinus radiata</i>	Poor	Poor	35%	Yes	Low	Moderate pest issues		WL changed species from Italian stone to Monterey pine	X						\$ 2,484
105	48.6				49	Monterey pine	<i>Pinus radiata</i>	Poor	Poor	35%	Yes	Low	HAZARD-Remove Hanging Limb	Moderate pest issues	WL changed species from Italian stone to Monterey pine	X						\$ 2,484
106	18				18	Pinus species	<i>Pinus sp.</i>	Fair	Poor	40%	Yes	Low	Suppressed growth	Sparse canopy		X						\$ 1,241
107	27.2				27	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	55%	Yes	Mod	Sparse canopy			X						\$ 2,484
108	11.4				11	coast live oak	<i>coast live oak</i>	Poor	Fair	68%	Yes	Mod	Trunk lean	Suppressed growth		X						\$ 2,484
109	18.7				19	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	70%	Yes	Mod	Cavity at root collar	Shared canopy		X						\$ 1,241
110	24.4				24	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	60%	Yes	Mod	Bifurcated trunk issue	Shared canopy		X						\$ 2,484
111	27				27	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	55%	Yes	Mod	Bifurcated trunk issue	Suppressed growth		X						\$ 2,484
112	21.5				22	incense cedar	<i>Calocedrus decurrens</i>	Fair	Fair	70%	Yes	Mod	Shared canopy	Trunk lean		X						\$ 1,241
113	18.4	18			37	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	60%	Yes	Mod	Dense canopy	One sided canopy		X						\$ 2,484
114	9.3	13	10		32	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	50%	Yes	Mod	Stunted growth	One sided canopy		X						\$ 2,484
115	15.4	7.7	6.8		30	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	50%	Yes	Mod	One sided canopy			X						\$ 2,484
116	24.1				24	incense cedar	<i>Calocedrus decurrens</i>	Poor	Fair	48%	Yes	Mod	Stunted growth	One sided canopy	Bifurcated trunk issue	X						\$ 2,484
117	16.3	9.5	13		39	coast live oak	<i>Quercus agrifolia</i>	Poor	Fair	55%	Yes	Mod	Suppressed growth			X						\$ 4,968
118	16				16	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	55%	Yes	Low	Trunk lean	Suppressed growth		X						\$ 932
119	27				27	Italian stone pine	<i>Pinus pinea</i>	Poor	Fair	50%	Yes	Low	Trunk lean	One sided canopy		X						\$ 2,484
120	22.2				22	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	55%	Yes	Low	Sparse canopy	Bifurcated leader		X						\$ 1,241
121	23.8				24	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	60%	Yes	Mod	Trunk undercut - root	Trunk lean		X						\$ 2,484
122	21.3				21	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	60%	Yes	Low	Suppressed growth	Sparse canopy		X						\$ 1,241
123	21.3				21	Italian stone pine	<i>Pinus pinea</i>	Poor	Poor	45%	Yes	Low	Bifurcated trunk issue	Suppressed growth	Sparse canopy	X						\$ 1,241
124	26.5				27	Italian stone pine	<i>Pinus pinea</i>	Fair	Fair	60%	Yes	Mod	Suppressed growth			X						\$ 2,484
125	6.8	6			13	coast live oak	<i>Quercus agrifolia</i>	Fair	Fair	50%	Yes	Mod	Moderate pest issues	Root collar not exposed	Trunk wounds	X						\$ 2,484

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

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Tree Assessment Chart
 Ralph Osterling Consultants (ROC) + Walter Levison Consulting Arborist (WLCA)
Crystal Springs Uplands School
 Belmont, CA

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126	12.5				13	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	75%	Yes	Mod	Root collar not exposed	Dense canopy		X					\$ 2,484
127	20.5				21	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	60%	Yes	Mod	One sided canopy			X					\$ 1,241
128	9.5				10	coast live oak	<i>Quercus agrifolia</i>	Fair	Poor	35%	Yes	Low	Trunk wounds	Severe pest issues		X					\$ 2,484
129	16				16	deodar cedar	<i>Cedrus deodara</i>	Fair	Fair	55%	Yes	Mod	Bifurcated leader	Trunk lean		X					\$ 932
130	12.8				13	deodar cedar	<i>Cedrus deodara</i>	Poor	Fair	47%	Yes	Low	Trunk undercut	Sparse canopy		X					\$ 932
131	10.5				11	Victorian box	<i>Pittosporum undulatum</i>	Fair	Good	70%	Yes	Mod	Dense canopy			X					\$ 932
132	11.8				12	evergreen pear	<i>Pyrus kawakamii</i>	Poor	Poor	35%	Yes	Low	Trunk wounds	Sparse canopy		X					\$ 932
133	11.3				11	evergreen pear	<i>Pyrus kawakamii</i>	Fair	Poor	35%	Yes	Low	Trunk wounds			X					\$ 932
134	12.5				13	evergreen pear	<i>Pyrus kawakamii</i>	Fair	Poor	45%	Yes	Low	Trunk wounds			X					\$ 932
135	12.6				13	evergreen pear	<i>Pyrus kawakamii</i>	Poor	Poor	45%	Yes	Low	Trunk lean	Sparse canopy		X					\$ 932
136	4.2	3.5	2.4		10	weeping bottlebrush	<i>Callistemon viminalis</i>	Very Poor	Poor	38%	Yes	Low	Suppressed growth	One sided canopy		X					\$ 932
137	29.8				30	Italian stone pine	<i>Pinus pinea</i>	Fair	Good	70%	Yes	Low	Shared canopy	Branch end weight issue		X					\$ 2,484
138	47.4				47	Italian stone pine	<i>Pinus pinea</i>	Poor	Good	65%	Yes	Low	Trunk wounds	Shared canopy		X					\$ 2,484
139	13.5	12			26	coast live oak	<i>Quercus agrifolia</i>	Good	Very Poor	25%	Yes	Low	Trunk wounds	Sparse canopy		X					\$ 4,968
140	22.4				22	Italian stone pine	<i>Pinus pinea</i>	Poor	Fair	45%	Yes	Low	Stunted growth	Sparse canopy		X					\$ 1,241
141	12.2	24			36	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	40%	Yes	Low	Tree in decline	Branch dieback		X					\$ 2,484
142	20				20	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	50%	Yes	Low	Suppressed growth			X					\$ 1,241
143	9.8	8.9	22		41	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	47%	Yes	Low	Suppressed growth			X					\$ 2,484
144	28	15	7.5		50	Italian stone pine	<i>Pinus pinea</i>	Fair	Poor	50%	Yes	Low	Low branch over entrance	Suppressed growth		X					\$ 2,484
145	14.1				14	European white birch	<i>Betula pendula</i>	Fair	Fair	60%	Yes	Mod	Dense canopy	Shared canopy		X					\$ 932
146	9.8				10	European white birch	<i>Betula pendula</i>	Fair	Fair	57%	Yes	Mod	Dense canopy	One sided canopy		X					\$ 932
147	43				43	Monterey pine	<i>Pinus radiata</i>	Fair	Good	45%	Yes	Low	Dense canopy	Over mature tree	WL changed species from Italian stone to Monterey pine	X					\$ 2,484
148	26.4	36	35		97	Monterey pine	<i>Pinus radiata</i>	Fair	Poor	45%	Yes	Low	Branch dieback	Stunted growth		X					\$ 2,484
149	25.5				26	Monterey pine	<i>Pinus radiata</i>	Poor	Poor	30%	Yes	Low	Stunted growth	Branch dieback		X					\$ 2,484
150	25.6				26	Monterey pine	<i>Pinus radiata</i>	Very Poor	Poor	30%	Yes	Low	Tree was topped	Branch dieback		X					\$ 2,484
151	5.5	3.5	3.2		12	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	50%	Yes	Low	Dense canopy			X					\$ 932
152	¥10.6	¥6.2			17	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	50%	Yes	Low	Dense canopy			X					\$ 932

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

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Tree Assessment Chart
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Crystal Springs Uplands School
 Belmont, CA

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153	¥6.3	¥4.2	3.5		14	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	50%	Yes	Low	Dense canopy			X					\$ 932
154	¥7	¥8	¥5.3		20	weeping bottlebrush	<i>Callistemon viminalis</i>	Poor	Good	50%	Yes	Low	Dense canopy			X					\$ 1,241
155	13.2				13	Italian stone pine	<i>Pinus pinea</i>	Good	Good	80%	Yes	Mod	Good overall			X					\$ 932
156	5.5	2.6	2		10	coast live oak	<i>Quercus agrifolia</i>	Good	Good	80%	Yes	High	Good overall	Consider for relocation		X	X				\$ 2,484
157	14.9				15	deodar cedar	<i>Cedrus deodara</i>	Good	Fair	75%	Yes	Mod	Branch dieback			X					\$ 932
158	8.5	9.2			18	deodar cedar	<i>Cedrus deodara</i>	Poor	Good	65%	Yes	Low	Bifurcated trunk issue			X					\$ 1,241
159	16.1				16	deodar cedar	<i>Cedrus deodara</i>	Good	Good	75%	Yes	High	Good overall	Consider for relocation		X	X				\$ 932
160	9.7				10	coast live oak	<i>Quercus agrifolia</i>	Good	Fair	70%	Yes	High	Balanced canopy	Consider for relocation		X	X				\$ 2,484
161	19.4				19	flooded gum	<i>Eucalyptus rudis</i>	Fair	Fair	60%	Yes	Low	Trunk lean	Branch end weight issue	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 1,241
162	5.1	4.1	2.9		12	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	80%	Yes	High	Bifurcated trunk issue	Consider for relocation		X	X				\$ 2,484
163	5.7	4.1	2		12	coast live oak	<i>Quercus agrifolia</i>	Fair	Good	80%	Yes	High	Bifurcated trunk issue	Consider for relocation		X	X				\$ 2,484
164	11.5				12	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Fair	25%	Yes	Low	Evidence of limb failure	Tree was topped	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
165	15.3				15	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Good	30%	Yes	Low	Evidence of limb failure	Trunk wounds	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
166	18.7				19	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Good	25%	Yes	Low	Trunk lean	Evidence of limb failure	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 1,241
167	17.7				18	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Good	30%	Yes	Low	Tree was topped	Branch failure	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 1,241
168	8.6	9.7			18	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Poor	25%	Yes	Low	Severe pest issues	Bifurcated trunk issue	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 1,241
169	¥24				24	Italian stone pine	<i>Pinus pinea</i>	Fair	Very Good	68%	Yes	Mod	Vigorous growth			X					\$ 2,484
170	18.5				19	flooded gum	<i>Eucalyptus rudis</i>	Very Poor	Fair	35%	Yes	Low	Evidence of limb failure	Branch failure	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 1,241
171	17				17	flooded gum	<i>Eucalyptus rudis</i>	Poor	Poor	45%	Yes	Low	Trunk lean	High foliar canopy	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
172	5.7	5.2	5.5		16	flooded gum	<i>Eucalyptus rudis</i>	Poor	Very Poor	25%	Yes	Low	Tree in decline	Trunk wounds	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
173	15				15	flooded gum	<i>Eucalyptus rudis</i>	Poor	Poor	40%	Yes	Low	Evidence of limb failure	Trunk wounds	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
174	11.4				11	flooded gum	<i>Eucalyptus rudis</i>	Poor	Very Poor	25%	Yes	Low	Trunk wounds	Trunk lean	<small>This species ID'd by Calif. Dept. of Agriculture head taxonomist Fred Husa.</small>	X					\$ 932
175	17				17	coast live oak	<i>Quercus agrifolia</i>	Poor	Poor	34%	Yes	Low	Tree in decline			X					\$ 2,484
176	17				17	coast live oak	<i>Quercus agrifolia</i>	Good	Very Good	80%	Yes	High	Good overall	Consider for relocation	Or adjust proposed swale to avoid root zone of tree.	X	X		G	TB, TPZ	\$ 2,484
177	3.3	3	2.8	1.9	11	Australian willow	<i>Geijera parviflora</i>	Good	Good	80%	Yes	High	Balanced canopy	Consider for relocation		X	X				\$ 932

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

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Tree Assessment Chart
 Ralph Osterling Consultants (ROC) + Walter Levison Consulting Arborist (WLCA)
Crystal Springs Uplands School
 Belmont, CA

Tree Tag #	Trunk Diameter	Trunk Diameter	Trunk Diameter	Trunk Diameter	Total Sum of Trunk Diameters	Common Name	Botanical Name	Structure	Health	Overall Condition Rating (0 to 100%) by WLCA	Protected Tree	Suitability	Comment 1	Comment 2	Comment 3	Removal Per Site Plan (WLCA)	Potential Transplant Candidate	Expect Site Plan Impacts (WLCA)	Suggested Site Plan Adjustments (WLCA) (R)oads/paths, (U)tilities, (F)ootprint, (G)radling.	Protection and Maintenance Codes (WLCA)	Tree Removal Fee per 2011-12 Fee Schedule (WLCA)	
178	14.9	11			26	coast live oak	<i>Quercus agrifolia</i>	Exc.	Good	80%	Yes	High	Overhangs into the proposed cafeteria area.			X		X		TPZ AT CANOPY DRIPLINE.	\$ 4,968	
179	42				42	Monterey pine	<i>Pinus radiata</i>	Fair	Fair	57%	Yes	Mod	Overhangs into the proposed cafeteria area.	Species affected by pine pitch canker and bark beetle attacks which shortens expected useful lifesplan.			X		X		TPZ AT CANOPY DRIPLINE.	\$ 2,484
180	12				12	coast live oak	<i>Quercus agrifolia</i>	Good	Good	75%	Yes	High	Expect impacts from proposed path north of amphitheatre.	Fence at 12 feet radius out from trunk.	Adjust path alignment to optimize root preservation.	X		X	R	TPZ, TB	\$ 2,484	
181	6	6			12	coast live oak	<i>Quercus agrifolia</i>	Good	Good	80%	Yes	High	Expect impacts from proposed ADA ramp for amphitheatre.	Fence at 12 feet radius out from trunk.	Adjust ramp alignment to optimize root preservation.	X		X	R	TPZ, TB	\$ 2,484	
182	16.2	10	9.5		36	coast live oak	<i>Quercus agrifolia</i>	Poor	Poor	45%	Yes	High	Expect impacts from proposed roadway realignment.	Canopy overhangs existing gravel road.	Adjust proposed location of new curb, and perform root crown excavation and fill soil removal.	X		X	R	TPZ, TB, RF, RCE	\$ 4,968	
183	13.5	14			27	coast live oak	<i>Quercus agrifolia</i>	Fair	Fair	58%	Yes	High			Adjust proposed location of new curb, and perform root crown excavation and fill soil removal.	X		X	R	TPZ, TB, RF, RCE	\$ 4,968	
184	15	14	11		39	coast live oak	<i>Quercus agrifolia</i>	Fair	Fair	55%	Yes	High			Adjust proposed location of new curb, and perform root crown excavation and fill soil removal.	X		X	R	TPZ, TB, RF, RCE	\$ 4,968	

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

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Tree Assessment Chart
 Ralph Osterling Consultants (ROC) + Walter Levison Consulting Arborist (WLCA)
Crystal Springs Uplands School
 Belmont, CA

Tree Tag #	Trunk Diameter	Trunk Diameter	Trunk Diameter	Trunk Diameter	Total Sum of Trunk Diameters	Common Name	Botanical Name	Structure	Health	Overall Condition Rating (0 to 100%) by WLCA	Protected Tree	Suitability	Comment 1	Comment 2	Comment 3	Removal Per Site Plan (WLCA)	Potential Transplant Candidate	Expect Site Plan Impacts (WLCA)	Suggested Site Plan Adjustments (WLCA) (R)oads/paths, (U)tilities, (F)ootprint, (G)radling.	Protection and Maintenance Codes (WLCA)	Tree Removal Fee per 2011-12 Fee Schedule (WLCA)		
185	11.4				11	coast live oak	<i>Quercus agrifolia</i>	Poor	Poor	37%	Yes	Mod			Adjust proposed location of new curb, and perform root crown excavation and fill soil removal.	X		X	R	TPZ, TB, RF, RCE	\$ 2,484		
186	12	10	6	6	34	coast live oak	<i>Quercus agrifolia</i>	Good	Fair	70%	Yes	High			Adjust proposed location of new curb, and perform root crown excavation and fill soil removal.	X		X	R	TPZ, TB, RF, RCE	\$ 4,968		
																					Total tree removal fees (all 86 trees)	\$ 171,390	
																						Tree removal fees for all trees minus seven transplants and minus nine trees #178 through #186 to be retained along perimeter.	\$ 122,330

Notes:

- WLCA added a numeric overall condition rating to the Ralph Osterling Consultants tree data charts.
- WLCA also added five (5) columns to the right-hand side of the ROC tree data charts, including 'removal per site plan', 'expect site plan impacts', 'suggested site plan adjustments', 'protection and maintenance codes', and 'tree removal fee 2011-12 fee schedule'.
- Trees #178 through #186 were tagged, located, photographed, assessed, and added to the data charts by WLCA due to expected impacts from site plan work based on the current proposed plan set.
- Blue highlight = Ralph Osterling Consultants data cells adjusted by WLCA to correct the species identification (e.g. Monterey pine and flooded gum specimens).

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

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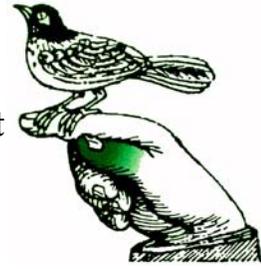
Tree Assessment Chart
 Ralph Osterling Consultants (ROC) + Walter Levison Consulting Arborist (WLCA)
Crystal Springs Uplands School
 Belmont, CA

Tree Tag #	Trunk Diameter	Trunk Diameter	Trunk Diameter	Trunk Diameter	Total Sum of Trunk Diameters	Common Name	Botanical Name	Structure	Health	Overall Condition Rating (0 to 100%) by WLCA	Protected Tree	Suitability	Comment 1	Comment 2	Comment 3	Removal Per Site Plan (WLCA)	Potential Transplant Candidate	Expect Site Plan Impacts (WLCA)	Suggested Site Plan Adjustments (WLCA) (R)oads/paths, (U)tilities, (F)ootprint, (G)radings.	Protection and Maintenance Codes (WLCA)	Tree Removal Fee per 2011-12 Fee Schedule (WLCA)
<p>Protection and Maintenance Codes per Contract City Arborist (WLCA):</p> <p>TPZ: Tree protection fence, chain link, with 2" diameter iron posts driven 24" into the ground, 6 to 8 feet on center max. spacing, with TENAX silt fence installed on uphill side of fence and ziptied to the chain link.</p> <p>RB: Root buffer consisting of wood chip mulch lain over existing soil as a 12 inch thick layer, overlain with 1 inch or greater plywood strapped together with metal plates. This root buffer or soil buffer should be placed over the entire width of the construction corridor between tree trunks and construction.</p> <p>TB: Trunk buffer constructed as indicated above in the tree charts, consisting of either a straw wattle wrapped around the trunk, or 10-20 wraps of orange plastic snow fencing to create a 2 inch thick buffer over the lowest 8 feet of tree trunk. Secure buffer using duct tape (not wires).</p> <p>F: Fertilization with Greenbelt 22-14-14 tree formula.</p> <p>M: 4 inch thick layer of wood chip mulch (Lyngso, self pickup).</p> <p>W: Irrigate using various methods to be determined through discussion between City Arborist and General Contractor. Irrigation frequency and duration to be determined through discussion. Permanent irrigation must be over-grade only, with no pipe trenching deeper than 4 inches below grade. Netafim professional grade emitter line is the preferred alternative "trenchless" drip irrigation product.</p> <p>P: Pruning per specifications noted elsewhere. All pruning must be performed only under direct site supervision of an ISA Certified Arborist, or performed directly by an ISA Certified Arborist.</p> <p>MON: Requires that Contract City Arborist (CCA) be present to monitor trenching/excavation within 20 feet of tree.</p> <p>RCE: Root crown excavation by an ISA Certified Arborist, using dull rounded hand tools to reestablish original soil grade elevations around the trunk base such that buttress root "flares" are visible.</p> <p>RF: Remove fill soil by hand using shovels and wheelbarrows to reestablish original grade and increase aerobic function of tree root zone area under canopy dripline.</p>																					

Overall Condition Rating Range: Very Poor 0-25%, Poor 26-49%, Fair 50-69%, Good 70-90%, Excellent 90-100%

Ralph Osterling Consultants

Natural & Urban Resources Management



18 January 2012

Mr. Damon Didonato, Senior Planner
City of Belmont
One Twin Pines Drive
Belmont, CA 94002

Re: Crystal Springs Uplands School—Complex Project--PA2011-0052
Response to City Arborist Report

Dear Mr. Didonato,

As Project Arborist for the Crystal Springs Uplands School (CSUS) Project, Ralph Osterling Consultants, Inc. (ROC) is writing in response to your letter of 29 November 2011 regarding the status of the CSUS application for its middle school campus.

Specifically, as Project Arborist we were asked to respond to the concerns presented by the City Arborist in his Tree Report of 17 November 2011. His report was thoughtful and very detailed.

The two major sections of concerns in his report were 2.2 - Impact Mitigation Matrix (Attachment 1) and 2.4 - Landscape Plan Issues (Attachment 2). Our responses are contained on the following pages.

Should you have questions or require additional information please do not hesitate to contact me.

Sincerely,

Ralph Osterling
President
Registered Professional Forester No. 38

Attachments

1650 Borel Place, Suite 204 ▪ San Mateo, CA 94402
(650) 573-8733 ▪ Fax (650) 345-7890 ▪ email: walt@ralphosterling.com

2.2 Impact Mitigation Matrix

Impact Expected	Tree Tag Numbers Affected	Suggested Mitigation	Response
Path, west side of amphitheatre	#176, 180	Realign proposed path to avoid canopies of trees and maintain at least 12 linear feet radius from #176 and #180. Note Tree #176 may be transplanted.	The amphitheater is no longer on the plans. (Please refer to current plan submittal.) Path stairway is considered for improvement for safety and to reduce soil compaction within the dripline of tree #176.
ADA Ramp, east side of amphitheatre	#181	Realign proposed ADA ramp to at least 12 linear feet radius from the trunk of #181.	The amphitheater is no longer on the plans. (Please refer to current plan submittal.)
Cafeteria footprint	#178, 179	Install tree protection zone chain link fence (TPZ) at canopy dripline of trees #178, #179 which extend over the existing asphalt areas.	CSUS wishes to preserve these native oaks and is developing plans to address both tree preservation and defensible space requirements.
Asphalt roadway extension with low defensible space wall.	#182, 183, 184, 185, 186	Work with CCA to adjust location of new wall and limit use of machinery under existing oak canopy driplines which overhang the existing gravel driveway. Perform root crown excavations and fill soil removal by hand using hand shovels and wheelbarrows along the north sides of the trunks of these five (5) trees. The root zones of these trees are currently buried beneath years of illegal fill soil and landscape waste dumping off the edge of the existing gravel driveway.	The City Fire Marshall raised concerns regarding the overreaching tree canopies. CSUS wishes to preserve this grove of native oaks and is developing plans to address both tree preservation and defensible space requirements. Soil compaction will be exacerbated by work crews and wheelbarrows. ROC suggests removing soil and debris using a small excavator situated on the asphalt surface that can reach beneath the canopies and remove deleterious material. Finish work is to be completed by hand.
Landscape Plan / Defensible Space Plan	Existing native oaks, willows and shrubs ringing the south side of the site (somewhat inaccessible at the time of writing).	Scale back the scope of the proposed landscape plan such that new plantings are constrained to the previously developed areas of the site. If possible, avoid large scale planting and irrigating in the wild southern boundary (existing sloping areas) between trees #176 and #180 (text reads #108). Determine if we can create a defensible space that would allow for retention of existing native shrubs and native trees along the south border areas.	The City Fire Marshall raised concerns regarding the risk posed by the understory native shrubs and native tree density. The native landscape will require a creative approach to retain certain existing natives, reduce the fuel load risk and preserve the integrity of the slope. The design team is working with Ralph Osterling, Registered Professional Forester, wildland fire expert and a specialist in fuel management for design options.

2.4 Landscape Plan Issues

a. Classroom Building Turnaround:

The Landscape Architect's (LA) shows tree type II *Ginkgo biloba* for the turnaround area. This tree species is quite slow growing. See WLCA's information below regarding potential alternative tree species for this site.

- Recommendations from the City Arborist were taken into consideration in the revised landscape plans

b. East corner and Amphitheater Surround:

The author (ROC) did not survey existing plant materials in the east corner of the property. It appears to be a native coastal scrub with native coastal sage and coyote brush. Removal of these materials and installing tree type II per the landscape plan may constitute a significant loss of native habitat.

- The tree survey completed by ROC was limited to the developed portion of the property.
- The amphitheater was removed on the revised conceptual plans.
- In light of the recent site meeting with the City Fire Marshall who identified concerns with respect to the existing native vegetation the design team has retained the services of Ralph Osterling, Registered Professional Forester and wildland fire expert to develop an appropriate landscape design.

There is a native willow forest that ROC and WLCA did not survey located just downhill from the proposed amphitheater and deck. This existing native moist forest area (depression) is shown on the landscape plan as to be installed with type III plantings. The LA's proposed type III trees include native coast live oak and blue oak.

- According to the City Fire Marshall the willows pose a fire risk that should be mitigated.
- The design team has retained the services of Ralph Osterling, Registered Professional Forester and wildland fire expert to develop an appropriate landscape design that will manage the fuel load, retain certain native shrubs and trees while preserving the integrity of the slope.

I would suggest eliminating use of very slow growing blue oak on this site, as it is more adapted to hotter area such as Los Altos Hills. Also, note that typical coast live oak stock in the Northern California's nursery trade is often girdled and doomed to poor performance due to the girdling roots. Buy from one of WLCA's preferred vendors to ensure good quality root stock (e.g. Specialty Oaks of Lower Lake, CA)

- The recommendations of the City Arborist were taken into consideration with revisions of the landscape plan.
- The recommendations of the City Arborist will be taken into consideration when suppliers of required plant material are requested for proposals or bids.

Installation of any new plants or trees in the existing native willow forest and adjoining native coastal scrub area is considered a significant negative impact and does not make any sense given that it would involve removal of existing established native tree and plants, and replacing them with other native tree and plant species that would then need to be established and maintained for decades to reach the density and wildlife value already achieved by the existing historic natural landscape.

I do understand that wildland/urban interface fire concerns may supersede wildlife concerns in this situation. However this does not negate the fact that a significant negative biological impact will occur as a result of the proposed site plan work. Note also that the south ends of the property abut up against the City Water Dog Lake property, acting as an important native species "buffer Zone" for the Water Dog Lake area.

- The design team has retained the services of Ralph Osterling, Registered Professional Forester and wildland fire expert to develop an appropriate landscape design that will manage the fuel load, retain certain native shrubs and trees while preserving the integrity of the slope. Mr. Osterling's native restoration experience and familiarity with the Dog Lake area and associated vegetation will insure the project's sensitivity to the native wildland.

c. South side of site groundcover:

The LA's plan shows installation of planting type IV (Ceanothus or Ribes) Throughout the native coast live forest and native coastal sage and coyote brush scrub areas ringing the south half of the site.

Installation of new planting may have a severe negative effect on existing native tree root systems if irrigation is proposed to be installed using trenched-in piping. Even if new irrigation is supplied with emitter tubing, this irrigation may by itself constitute a significant or severe negative impact due to type, effectively allowing soil borne pathogen growth which could cause decline and/or death of native oaks and other native tree and shrub species.

- The CSUS design shares the City Arborist's concern. The design team has retained the services of Ralph Osterling, Registered Professional Forester and wildland fire expert to develop an appropriate landscape design that will manage the fuel load, retain certain native shrubs and trees while preserving the integrity of the slope. Mr. Osterling's native restoration experience and familiarity with the Dog Lake area and associated vegetation will insure the project's sensitivity to the native wildland.

I suggest that a survey of existing shrubs and trees in this "border zone" of the property be conducted. And the landscape plan be modified to allow for retention of as much of the existing materials as possible.

- This point was discussed during the 12/20/11 meeting with the City Arborist, ROC and K. Kavanaugh where all parties agreed it would not be necessary. At that time, CSUS did not intend to disturb the wildland area. However, after the 1/11/12 meeting with the City Fire Marshall the circumstances changed.
- As part of its design efforts, CSUC intends to have a tree and shrub survey report completed to determine what vegetation is suitable for preservation.

d. Frontage Areas:

The LA proposes three (3) species for tree type IV " non-pyrophytic" vegetation for the frontage areas of the property that will be planted and visible along Davis Drive. This includes the front parking lot and the semi circular turn around in front of the classrooms building.

The three tree species proposed by the LA are red maple (*Acer rubrum*), white alder (*Alnus rhombifolia*), and California sycamore (*Platanus racemosa*). All three of these species have issues that are of concern to consulting arborists:

Red maple is extremely sensitive to drought conditions and requires very heavy irrigation. This is the type of tree accustomed to east coast "monsoon" conditions. (i.e. summer rains and humidity) I would not recommend this tree for our frontage.

White alder is susceptible to boring beetles and various disease pathogens and is considered a primary riparian colonizing species that is very fast growing and short-lived. The tree is designed to grow riparian corridors (i/e/ Creekside) with good drainage and high moisture. Again, not a good choice for our frontage.

California sycamore is a very large riparian tree also adapted to high soil moisture conditions, and is best used for native plant restoration projects in the Sacramento delta area. It is susceptible to a myriad of pests and diseases.

- The revised landscape tree palette for tree type IV non-pyrophytic vegetation was changed to Columbia plane tree (*Platanus x acerifolia* 'Columbia').