

APPENDIX C

Biological Resources Documentation

Table 1
Summary of Special Status Plant Species Known to Occur in the Vicinity of the Maple & Main Site

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Bent-flowered fiddleneck <i>Amsinkia lunaris</i>	--	--	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	3-500m AH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Mt. Diablo manzanita <i>Arctostaphylos auriculata</i>	--	--	1B.3	Chaparral (sandstone), cismontane woodland	135-650m S(e) January-March	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Contra Costa manzanita <i>Arctostaphylos manzanita ssp laevigata</i>	--	--	1B1	Chaparral; rocky	430-1100m S(e) January-April	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Alkali milk-vetch <i>Astragalus tener var. tener</i>	--	--	1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools	1-60m AH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	--	--	1B.2	Chaparral, cismontane woodland, valley and foothill grassland	90-1555m PH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Round-leaved filaree <i>California macrophyllum</i>	--	--	1B2	Cismontane woodland, valley and foothill grassland/ clay	15-1200m AH March-May	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	--	--	1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland	30-840m PH(b) April-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Chaparral harebell <i>Campanula exigua</i>	--	--	1B.2	Chaparral (rocky, usually serpentinite)	275-1250m AH Nmay-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congonii</i>	--	--	1B.1	Valley and foothill grassland (alkaline)	0-230m AH May-November	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Point Reyes bird's beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	--	--	1B.2	Marshes and swamps	0-10m AH June-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	FE	--	1B.1	Chaparral (maritime), cismontane woodlands (openings), coastal dunes, coastal scrub	3-300m AH April-September	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Presidio clarkia <i>Clarkia franciscana</i>	FE	CE	1B.1	Coastal scrub, valley and foothill grassland (serpentinite)	25-335m AH May-July	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Hospital Canyon larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	--	--	1B.2	Chaparral (openings), cismontane woodland (mesic), coastal scrub	195-1095m PH April-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	--	--	1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; serpentinite, sandy to gravelly	0-700m AH May-September	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Mt. Diablo buckwheat <i>Eriogonum truncatum</i>	--	--	1B.1	Chaparral, coastal scrub, valley and foothill grassland; sandy	3-350m AH April-December	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Hoover's button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	--	--	1B.1	Vernal pools	3-45m AH/PH June-August	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
San Joaquin spearscale <i>Extriplex joaquinana</i>	--	--	1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; alkaline	1-835m AH April-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Minute pocket moss <i>Fissidens pauperculus</i>	--	--	1B.2	North coast coniferous forest (damp coastal soil)	10-1024m moss na	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Fragrant liliacea <i>Fritillaria ojaiensis</i>	--	--	1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite	3-410m PH(b) February-April	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Diablo helianthella <i>Helianthella castanea</i>	--	--	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, alley and foothill grassland.	60-1300m PH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Brewer's western flax <i>Hesperolinon breweri</i>	--	--	1B.2	Chaparral, cismontane woodland, valley and foothill grassland; usually serpentinite	30-945m PH May-July	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Loma Prieta hoita <i>Hoita strobilina</i>	--	--	1B.1	Chaparral, cismontane woodland, riparian woodland; usually serpentinite, mesic	30-860m PH May-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT	CE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland; often clay, sandy	10-220m AH June-october	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Kellogg's horkelia <i>Horkelia cuneata</i> ssp. <i>sericea</i>	--	--	1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/ sandy or gravelly, openings.	10-200m PH April -September	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Southern California black walnut <i>Juglans californica</i> var. <i>californica</i>	--	--	4.2	Chaparral, cismontane woodland, coastal scrub/ alluvial	50-900m S - T (d) March-August	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Northern California black walnut <i>Juglans hindsii</i>	--	--	1B.1	Riparian forest, riparian woodland.	0-440m T (d) April - May	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE	--	1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools; mesic	0-470m AH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Hall's bush mallow <i>Malacothammus hallii</i>	--	--	1B.2	Chaparral, coastal scrub	10-760m S(e) May-october	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Oregon meconella <i>Meconella oregana</i>	--	--	1B.1	Coastal prairie, coastal scrub	250-620m AH March-April	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Woodland woolythreads <i>Monolopia gracilens</i>	--	--	1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland	100-1200m AH February-July	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Shining navarretia <i>Navarretia nigelliformis ssp. radians</i>	--	--	1B.2	Cismontane woodland, valley and foothill grassland, vernal pools; sometimes clay	76-1000m AH April-July	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Mt. Diablo phacelia <i>Phacelia phaceloides</i>	--	--	1B.2	Chaparral, cismontane woodland; rocky	500-1370m AH April-May	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
San Francisco popcorn-flower <i>Plagiobothrys diffusus</i>		CE	1B.1	Coastal prairie, valley and foothill grassland	60-360m AH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Hairless popcorn-flower <i>Plagiobothrys glaber</i>	--	--	1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt)	15-180m AH March-May	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Oregon polemonium <i>Polemonium carneum</i>	--	--	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest	0-1830m PH April-September	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Marin knotweed <i>Polygonum marinense</i>	--	--	3.1	Marshes and swamps (coastal salt or brackish)	0-10m AH April-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Adobe sanicle <i>Sanicula maritima</i>	--	CR	1B.1	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland/ clay, serpentinite.	30-240m PH February-May	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Chaparral ragwort <i>Senecio aphanactis</i>	--	--	2B.2	Chaparral, cismontane woodland, coastal scrub/ alkaline	15-800m AH January-April	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Most beautiful jewelflower <i>Streptanthus albidus ssp. peramoenus</i>	--	--	1B.2	Chparral, cismontane woodland, valley and foothill grassland; serpentinite	95-1000m AH March-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Mt. Diablo jewelflower <i>Streptanthus hispidus</i>	--	--	1B.3	Chaparral, valley and foothill grassland; rocky	365-1200m AH March-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Slender-leaved pondweed <i>Stuckenia filiformis ssp. alpina</i>	--	--	2B.2	Marshes and swamps (assorted shallow freshwater)	300-2150m PH(r) May-July	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
California seablite <i>Suaeda californica</i>	FE	--	1B.1	Marshes and swamps (coastal salt)	0-15m S(e) July-October	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Saline clover <i>Trifolium hydrophilum</i>	--	--	1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	0-300m AH April-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species
Coastal triquetrella <i>Triquetrella californica</i>	--	--	1B.2	Coastal bluff scrub, coastal scrub	10-100m moss na	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species

Common Name <i>Scientific Name</i>	Status			Habitat Requirements	Elevation Range, Life Form, and Flowering Period	Potential Occurrence
	Federal	State	CNPS RPR			
Oval-leaved viburnum <i>Viburnum ellipticum</i>	--	--	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest	215-1400m S(d) May-June	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species

STATUS KEY:

Federal

FE: Federally Endangered
 FT: Federally Threatened Species
 FPE: Federally Proposed Endangered

State

CE: State Endangered
 CT: State Threatened
 CR: State Rare

LIFE FORM KEY:

AH: Annual Herb (b): bulb
 PH: Perennial Herb (d): deciduous
 S: Shrub (e): evergreen
 Moss: moss (r): rhizomatous

CNPS Rare Plant Rank

- RPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
- RPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- RPR 2A: Plants presumed extirpated in California, but common elsewhere
- RPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
- RPR 3: Plants about which more information is needed
- RPR 4: plants of limited distribution – a watch list

Threat Ranks

- 0.1 Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
 - 0.2 Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
 - 0.3 Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
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Table 2
Summary of Special-Status Wildlife Species Known to Occur in the Vicinity of the Maple & Main Site

Common Name <i>Scientific Name</i>	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
Invertebrates				
Gastropoda (snails and slugs)				
Bridge's Coast Range shoulderbrand (snail) <i>Helminthoglypta Nicklintana bridgesi</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Mimic Tryonia (=CA braskishwater snail) <i>Tryonia imitator</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Arachnida (spiders and relatives)				
Lee's micro-blind harvestman <i>Microcina leei</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Fairmont (=Lum's) micro-blind harvestman <i>Microcina lumi</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Crustacea Order Anostraca (fairy shrimp)				
California linderiella <i>Linderiella occidentalis</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Insecta Order Diptera (flies)				
Antioch efferian robberfly <i>Efferia antiochi</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Insecta Order Lepidoptera (butterflies and moths)				
Monarch butterfly (wintering sites) <i>Danaus plexippus</i>	--	sa	Winter roost sites located in wind-protected tree groves (gum trees, Monterey pine, and cypress trees), with nectar and water sources nearby.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name Scientific Name	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
Bay checkerspot butterfly <i>Euphydras editha bayensis</i>	FT	sa	Foothills of serpentine soils supporting host species, native plantain (<i>Plantago erecta</i>) and owl's clover (<i>Castilleja densiflorus</i> and <i>C. exserta</i>).	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE	--	Hilltops and ridges of coastal scrub supporting the host plant species, stonecrop (<i>Sedum spathulifolium</i>).	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Insecta Hymenoptera (ants, bees, and wasps)				
Obscure bumblebee <i>Bombus caliginosus</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Fishes				
OSMERIDAE (smelt)				
Longfin smelt <i>Spirinchus thaleichthys</i>	--	CT	Salt or brackish estuaries with a sandy-gravel substrate.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
SALMONIDAE (trout & salmon)				
Steelhead rainbow trout (Central CA Coast ESU) <i>Oncorhynchus mykiss irideus</i>	FT	--	Well-oxygenated, clean fresh water, with a temperature of around 12°C is preferred, although a range from 10°C to 24°C is tolerated. Tend to thrive better in lakes than in streams or rivers, although large fish are often present in remote headwaters.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
GOBIIDAE (gobies)				
Tidewater goby <i>Eucyclogobius newberryi</i>	FE	SSC	Shallow lagoons and lower coastal stream reaches with salinities from brackish to fresh	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
Amphibians				
AMBYSTOMATIDAE (mole salamanders)				
California tiger salamander <i>Ambystoma californiense</i>	FT	CT	Grasslands and lowest foothill regions and breeds in long-lasting rain pools. Dry, hardpan soils are necessary within one mile of breeding areas for refuge sites.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
RANIDAE				
California red-legged frog <i>Rana draytonii</i>	FT	SSC	Permanent water sources such as ponds, lakes, reservoirs, streams, and adjacent riparian woodlands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Foothill yellow-legged frog <i>Rana boylei</i>	--	SSC	Rocky streams in a variety of habitats.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Reptiles				
EMYDIDAE (box and water turtles)				
Western pond turtle <i>Emys marmorata</i>	--	SSC	Streams, ponds, freshwater marshes, and lakes with growth of aquatic vegetation.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
COLUBRIDAE (egg-laying snakes)				
Alameda whipsnake (striped racer) <i>Masticophis lateralis euryxanthus</i>	FT	CT	Inhabits dry brush and hilly grasslands, northern coastal scrub, chaparral and grassy areas of oak woodland.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Birds				
PHALACROCORACIDAE (cormorants)				
Double-crested cormorant (rookery site) <i>Phalacrocorax auritus</i>	--	SSC	Inland lakes, fresh, salt and estuarine waters. Overnight roosts on humanly inaccessible areas without vegetation.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
ARDEIDAE (herons, egrets, and bitterns)				
Great blue heron (rookery) <i>Ardea herodias</i>	--	sa (rookery)	Shallow, open water and open fields; nests in secluded groves of tall trees.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Black-crowned night heron (rookery) <i>Nycticorax nycticorax</i>	--	sa	Forages in freshwater and saltwater marsh habitats, margins of lakes, and mud-bordered bays. Roosts in dense groves of trees, usually near water.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
ACCIPITRIDAE (hawks, kites, harriers, & eagles)				
White-tailed kite (nesting) <i>Elanus leucurus</i>	--	sa	Open vegetation and uses dense woodlands for cover.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Northern harrier (nesting) <i>Circus cyaneus</i>	--	SSC	Coastal salt marsh, freshwater marsh, grasslands, and agricultural fields.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Sharp-shinned hawk (nesting) <i>Accipiter striatus</i>	--	sa	Woodlands and forages over dense chaparral and scrublands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Cooper's hawk (nesting) <i>Accipiter cooperi</i>	--	sa	Dense stands of live oaks and riparian woodlands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Swainson's hawk (nesting) <i>Buteo swainsoni</i>	--	CT	Open riparian habitat, in scattered trees or small groves in sparsely vegetated flatlands; typical habitat is open desert, grassland, or cropland.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Golden eagle (nesting & wintering) <i>Aquila chrysaetos</i>	--	CFP	Mountains, deserts, and open country.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
RALLIDAE (rails, coots, and gallinules)				
California black rail <i>Laterallus jamaicensis coturniculus</i>	--	CT, CFP	Tidal salt marshes dominated by pickleweed, and brackish and freshwater marshes.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
California clapper rail <i>Rallus crepitans obsoletus</i>	FE	CE, CFP	Coastal salt and brackish marshes and tidal sloughs; nests primarily in tidal sloughs using cordgrass and pickleweed, and forages in the lower marsh zone.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
CHARADRIIDAE (plovers and relatives)				
Western snowy plover (nesting) <i>Charadrius alexandrinus nivosus</i>	FT	SSC	Sandy ocean beaches and around the drying margins of lagoons; nests on sparsely vegetated sandy or gravelly habitats, on dry mud flats, or on dirt dikes and fills.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
LARIDAE (gulls, terns and skimmers)				
California least tern (nesting colony) <i>Sterna antillarum browni</i>	FE	CE, CFP	Marine and estuarine shores with nearby lagoons or lacustrine waters.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Black skimmer (nesting colony) <i>Rynchops niger</i>	--	SSC	Nests on sandy beaches or gravel bars.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
STRIGIDAE (owls)				
Western burrowing owl (burrow sites) <i>Athene cunicularia hypugea</i>	--	SSC	Grasslands and open scrub.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Short-eared owl (nesting) <i>Asio flammeus</i>	--	SSC	Open areas, including grasslands, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
FALCONIDAE (falcons)				
Prairie falcon (nesting) <i>Falco mexicanus</i>	--	WL	Grasslands, savannas, rangeland, agricultural fields, and desert scrub; requires sheltered cliff faces for shelter. Nests in cliffs or rocky outcrops.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name Scientific Name	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
ALAUDIDAE (larks)				
California horned lark <i>Eremophila alpestris actia</i>	--	WL	Short grasslands (stubble fields), disturbed areas, agriculture fields, and beach areas.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
HIRUNDINIDAE (swallows)				
Bank swallow (nesting) <i>Riparia riparia</i>	--	CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
PARULIDAE (wood-warblers)				
Yellow warbler (nesting) <i>Setophaga petechia brewsteri</i>	--	SSC	Riparian thickets and woodlands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	--	sa	Riparian thickets and riparian woodlands with a dense understory.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
EMBERIZIDAE (sparrows, buntings, warblers, & relatives)				
Alameda song sparrow <i>Melospiza melodia pusillula</i>	--	SSC	Emergent wetlands with low, dense vegetation such as willows.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Chipping sparrow (nesting) <i>Spizella passerina</i>	--	sa	Open woodlands and forests with grassy clearings	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
ICTERIDAE (blackbirds)				
Tricolored blackbird (nesting colony) <i>Agelaius tricolor</i>	--	SSC	Freshwater marshes and riparian scrub.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Mammals				
SORICIDAE (shrews)				
Salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	--	SSC	Dense, low-lying pickleweed areas.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name Scientific Name	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
TALPIDAE (moles)				
Alameda Island mole <i>Scapanus latimanus parvus</i>	--	SSC	Annual and perennial grasslands and pastures; some cropland, open forests and wet meadow. Friable soils needed.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
VESPERTILIONIDAE (evening bats)				
Silver-haired bat <i>Lasionycteris noctivagans</i>	--	sa	Prefer temperate, northern hardwoods with ponds or streams nearby.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Hoary bat <i>Lasiurus cinereus</i>	--	sa	Thought to prefer trees at the edge of clearings, but have been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks.	Low Potential. A few street trees along the boundaries of the site may provide temporary day roosts for hoary bats feeding in the area.
Yuma myotis <i>Myotis yumanensis</i>	--	sa	Found in a variety of habitats; optimal habitats are open forests and woodlands with sources of water over within to feed.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Townsend't big-eared bat <i>Corynorhinus townsendii</i>	--	SSC	Utilizes a variety of communities, including conifer and oak woodlands and forests, arid grasslands and deserts, and high-elevation forests and meadows.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Pallid bat <i>Antrozous pallidus</i>	--	SSC	Arid habitats, including grasslands, shrublands, woodlands, and forests; prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Western mastiff bat <i>Eumops perotis</i>	--	SSC	Primarily arid lowlands and coastal basins with rugged, rocky terrain, along with suitable crevices for day-roosts.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

Common Name <i>Scientific Name</i>	Status		Habitat Requirements	Potential Occurrence on the Project Site
	Federal	State		
HETEROMYIDAE (kangaroo rats, pockets mice, & kangaroo mice)				
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	--	sa	Grassland, shrubland	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
Santa Cruz kangaroo rat <i>Dipodomys venustus venustus</i>	--	sa		Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
MURIDAE (mice, rats, and voles)				
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE	CE, CFP	Pickleweed and salt marsh stands in tidal and diked coastal salt marshes.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	--	SSC	Forest habitats of moderate canopy and understory, and also in chaparral habitats. Generally absent from cultivated lands and grasslands.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
CANIDAE (foxes, wolves, and coyotes)				
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE	CT	Native alkali marsh and saltbush scrub of valley floors and adjacent foothill grasslands	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.
MUSTELIDAE (weasels and relatives)				
American badger <i>Taxidea taxus</i>	--	SSC	Drier open stages of shrub, forest, and herbaceous habitats with friable soils.	Not Expected. Site is completely developed and surrounded by development, providing no suitable habitat for this species.

KEY:

(nesting) = For most taxa the CNDDDB is interested in sightings for the presence of resident populations. For some species (primarily birds), the CNDDDB only tracks certain parts of the species range or life history (e.g., nesting locations). The area or life stage is indicated in parenthesis after the common name.

Status:

Federal -- U.S. Fish and Wildlife Service

FE: Federally Endangered

FT: Federally Threatened

State -- California Department of Fish and Wildlife

CE: California Endangered

CT: California Threatened

CFP: California Fully Protected

SSC: California Species of Special Concern

WL: CDFW Watch List

sa California Special Animal (species with no official federal or state status, but are included on CDFW's Special Animals list)



Preliminary Arborist Report

**Maple and Main
Hayward, CA**

**PREPARED FOR
Wood Rodgers, Inc.
4670 Willow Road, Suite 125
Pleasanton, CA 94588**

**PREPARED BY:
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November 18, 2015



**Preliminary Arborist Report
Maple and Main
Hayward, CA**

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Preliminary Arborist Report Maple and Main Apartments Hayward, CA

Introduction and Overview

Wood Rodgers, Inc. is planning to redevelop the property located at Maple Ct. and Main St. in Hayward, CA. Currently the site is a combination of single family homes, commercial buildings and associated parking lots. Wood Rodgers, Inc. plans to construct a high density housing complex. HortScience, Inc. was asked to prepare a **Preliminary Arborist Report** for the site as part of the application to the City of Hayward based on the conceptual site plan.

This report provides the following information:

1. Assessment of the health and structural condition of the trees within the proposed project area based on a visual inspection from the ground.
2. A preliminary evaluation of the trees that would be preserved and removed based on Wood Rodgers's development plans available to date.
3. Determination of the appraised value of each tree.
4. Guidelines for tree preservation during the design, construction and maintenance phases of development.

Final recommendations for tree removal and preservation will be made when grading, utility, construction and other specific plans are available.

Tree Assessment Methods

Trees were assessed on November 5, 2015. The survey included trees 4" in diameter and greater, located within and adjacent to the proposed project area. Off-site trees with canopies extending over the property line were included in the inventory. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with an identifying number and recording its location on a map;
3. Measuring the trunk diameter at a point 4.5' above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5 based on a visual inspection. Off-site trees were evaluated from the subject property and assessed based on a limited visual inspection. It was not possible to walk around the tree, which is necessary to do a complete visual assessment.
 - 5 - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
 - 4 - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
 - 3 - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
 - 2 - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
 - 1 - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.

High: Trees with good health and structural stability that have the potential for longevity at the site.

Moderate: Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.

Low: Tree in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes and generally are unsuited for use areas.

Description of Trees

Twenty-seven (27) trees representing 11 species were evaluated (Table 1). For all species combined, trees were in fair (26%) to good (63%) condition with 11% in poor condition. Eleven (11) off-site trees (#6-12 and #18-21) and four street trees (#2-5) were included in the assessment. Descriptions of each tree are found in the **Tree Assessment Form** and approximate locations are plotted on the **Tree Assessment Map** (see Exhibits).

Table 1. Condition ratings and frequency of occurrence of trees on and adjacent to Maple and Main project. Hayward, CA

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Blue atlas cedar	<i>Cedrus atlantica 'Glauca'</i>	-	1	-	1
Crape myrtle	<i>Lagerstroemia indica</i>	-	-	4	4
Glossy privet	<i>Ligustrum lucidum</i>	1	-	-	1
Flaxleaf paperbark	<i>Melaleuca linarifolia</i>	-	-	2	2
New Zealand Christmas Tree	<i>Metrosideros excelsa</i>	-	1	3	4
Avocado	<i>Persea americana</i>	1	-	-	1
Victorian box	<i>Pittosporus undulatum</i>	-	1	-	1
Chinese tallow tree	<i>Sapium sebiferum</i>	-	2	2	4
California pepper	<i>Schinus molle</i>	1	-	-	1
coast redwood	<i>Sequoia sempervirens</i>	-	1	4	5
windmill palm	<i>Trachycarpus fortunei</i>	-	1	2	3
Total		3	7	17	27

The most common species assessed was coast redwood (5 trees, 19% of the population). The largest coast redwood was growing on Levine Court (Photo 1). The other coast redwoods were located along the south side of the Hayward Professional Building (Photo 2). They were in good condition (4 trees) with one tree in fair condition. The redwoods were semi-mature to mature with trunk diameters ranging from 14" to 63".



Photo 1 (left) – Coast redwood #1 (63" diameter) was the largest tree assessed.

Photo 2 (right) – Coast redwoods #16 and 17 were growing in a small parking lot planter next to the Hayward Professional Building.

Four (4) Chinese tallow street trees were growing along Main Street. Although located under utility lines, they had not been topped (Photo 3). These trees were semi-mature to mature with trunk diameters ranging from 8" to 18" and in fair (6 trees) to poor (1 tree) condition. Several of the Chinese tallows' roots were displacing the sidewalks (Photo 4).

Four (4) New Zealand Christmas trees were growing off-site along the southern corner of the property (15% of the population). The New Zealand Christmas trees were in good (3 trees) to fair (1 tree) condition. They were young trees with trunk diameters ranging from 7" to 9" with an average diameter of 8".

Photo 3 (left) – Chinese tallow street trees were located along Main Street under utility lines.

Photo 4 (below right) – Chinese tallow roots were displacing the sidewalk along Main Street.



Four (4) crape myrtle trees were growing between the residence and parking lot on Maple Court. These trees were primarily small, growing just off-site along the fence. All four trees were young and in good condition with trunk diameters ranging from 4" to 6".

Three (3) windmill palm trees were growing in a row along Maple Court in front of the Hayward Professional Building. These trees were semi-mature (average trunk diameter 10") and in fair (1 tree) to good (2 trees) condition.

Two (2) flaxleaf paperbark trees were off-site growing in the corner restaurant parking lot. Both were in good condition and semi-mature trees (average diameter 9").

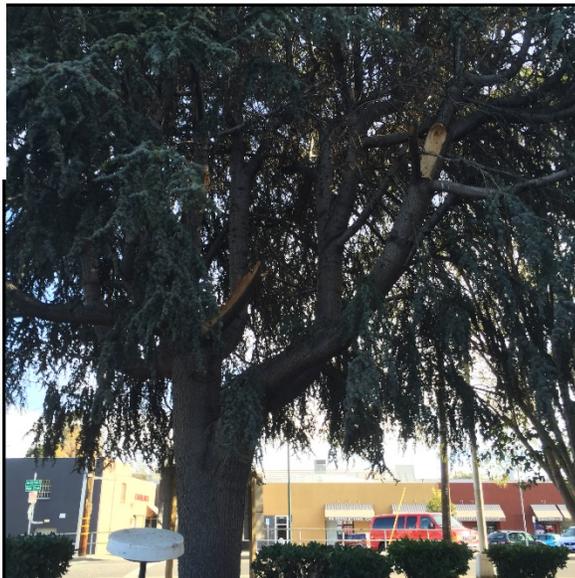
The avocado was located behind the Maple residence and the Victorian box was located in the front of the McKeever residence. The avocado was in poor condition and the Victorian box in fair.

The single blue Atlas cedar (Photo 5) was located at the corner of McKeever and Maple was in fair condition. The diameter of this tree was 30". The tree had at least two branch failures and was experiencing drought stress (Photo 6).

Photo 5 (top right) – Blue Atlas cedar #26 was located on the corner of McKeever and Maple was drought stressed.



Photo 6 (bottom right) – Blue Atlas cedar #26 had history of branch failures requiring pruning if to be preserved.



The City of Hayward protects native trees 4" and greater and all trees 8" and greater in trunk diameter. Based on this definition, 19 trees are protected and cannot be removed without a permit. Protected status of individual trees is identified in the **Tree Assessment Form** (see Exhibits).

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees. For example, glossy privet #25 is in poor condition; this tree likely will not tolerate construction impacts as well as the healthier privet.
- **Structural integrity**
Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. California pepper #13 is an example of such a tree.
- **Species response**
There is a wide variation in the response of individual species to construction impacts and changes in the environment. For instance, coast redwood is more tolerant of construction impacts than California pepper.
- **Tree age and longevity**
Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.
- **Species invasiveness**
Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (<http://www.cal-ipc.org/paf/>) lists species identified as being invasive. Hayward is part of the Central West Floristic Province. Chinese tallow tree is listed as moderate and California pepper is listed as limited invasiveness.

Limited invasiveness is defined as “species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.”

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (see ***Tree Assessment Forms*** in

Exhibits, and Table 2). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

**Table 2: Tree suitability for preservation
Maple and Main, Hayward, CA**

High These are trees with good health and structural stability that have the potential for longevity at the site. Ten trees had high suitability for preservation.

Tag #	Species	Diameter
4	Chinese tallow tree	18
8	New Zealand Christmas tree	7
15	Coast redwood	18,9
17	Coast redwood	18,14
18	Crape myrtle	4
19	Crape myrtle	6
20	Crape myrtle	5
21	Crape myrtle	5
22	Windmill palm	11
24	Windmill palm	11

Moderate Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the “high” category. Thirteen (13) trees had moderate suitability for preservation.

Tag #	Species	Diameter
1	Coast redwood	63
14	Coast redwood	22,20
16	Coast redwood	27
2	Chinese tallow tree	10
3	Chinese tallow tree	12
5	Chinese tallow tree	8
6	New Zealand Christmas tree	8
7	New Zealand Christmas tree	8
9	New Zealand Christmas tree	9
10	Flaxleaf paperbark	10,9
11	Flaxleaf paperbark	7
23	Windmill palm	7
26	Blue atlas cedar	30

Low Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either

characteristics that are undesirable in landscape settings or be unsuited for use areas. Four trees had low suitability for preservation.

Tag #	Species	Diameter
12	Avocado	14,9,8,5,5
13	California pepper	20,17
25	Glossy privet	12,10,9,6,5
27	Victorian box	5

Preliminary Evaluation of Impacts and Recommendations

The **Tree Assessment** was the reference point for tree health, condition, and suitability for preservation. Detailed construction plans have yet to be prepared. I used the *Site Plan and Ground Level Plan* created by Humphreys & Partners Architects dated September 2015 to estimate impacts to trees. The plan includes constructing residential units, parking lots, courtyards and associated landscapes. Potential impacts from construction were estimated for each tree. Precise impacts will have to be determined once trees have been accurately plotted on the final plans.

Overall, the preliminary project plans are to remove 15 trees (13 protected trees), including 11 on-site trees and four street trees (Table 3). Twelve (12) tree can be potentially preserved.

Due to the density of development, potential on-site tree preservation is limited to blue atlas cedar #26. The remaining 11 on-site trees and four street trees will be removed. Glossy privet #25 has adequate space to be preserved but is in poor condition. Wood Rogers plans to remove street trees #2-5 and on-site trees #22-24 as part of the construction process; I have not seen construction plans requiring their removal.

All of the 11 off-site trees (#2-12 and 18-21) can be potentially preserved. Preservation of the 11 off-site trees and one on-site tree is predicated on providing the trees with adequate protected space (**Tree Protection Zones** listed in Table 5) and following the **Tree Protection Guidelines** (see below). Once trees have been accurately located and detailed development plans prepared, the project arborist should re-evaluate the ability to preserve these trees. Off-site avocado #12 had trunk decay and poorly attached branches. Given its close proximity to the project, Wood Rogers may consider approaching the neighbor about the future plans for this tree and further assessments to evaluate its structural stability.

**Table 3: Preliminary tree disposition
Maple and Main, Hayward, CA**

Tag	Species	Disposition	Protected	Location	Comments
1	Coast redwood	Remove	Yes	On-site	Within building footprint
2	Chinese tallow tree	Remove	Yes	Street	Requested by developer
3	Chinese tallow tree	Remove	Yes	Street	Requested by developer
4	Chinese tallow tree	Remove	Yes	Street	Requested by developer
5	Chinese tallow tree	Remove	Yes	Street	Requested by developer
6	New Zealand Christmas Tree	Potentially preserve	Yes	Off-site	Accurately locate trunk

Tag	Species	Disposition	Protected	Location	Comments
7	New Zealand Christmas Tree	Potentially preserve	Yes	Off-site	Accurately locate trunk
8	New Zealand Christmas Tree	Potentially preserve	No	Off-site	Accurately locate trunk
9	New Zealand Christmas Tree	Potentially preserve	Yes	Off-site	Accurately locate trunk
10	Paperbark	Potentially preserve	Yes	Off-site	Accurately locate trunk
11	Paperbark	Potentially preserve	No	Off-site	Accurately locate trunk
12	Avocado	Potentially preserve	Yes	Off-site	Accurately locate trunk
13	California pepper	Remove	Yes	On-site	Within building footprint
14	Coast redwood	Remove	Yes	On-site	Within fire lane
15	Coast redwood	Remove	Yes	On-site	Within fire lane
16	Coast redwood	Remove	Yes	On-site	Within fire lane
17	Coast redwood	Remove	Yes	On-site	Within fire lane
18	Crape myrtle	Potentially preserve	No	Off-site	Accurately locate trunk
19	Crape myrtle	Potentially preserve	No	Off-site	Accurately locate trunk
20	Crape myrtle	Potentially preserve	No	Off-site	Accurately locate trunk
21	Crape myrtle	Potentially preserve	No	Off-site	Accurately locate trunk
22	Windmill palm	Remove	Yes	On-site	Requested by developer
23	Windmill palm	Remove	No	On-site	Requested by developer
24	Windmill palm	Remove	Yes	On-site	Requested by developer
25	Glossy privet	Remove	Yes	On-site	Poor condition
26	Blue atlas cedar	Potentially preserve	Yes	On-site	Accurately locate trunk
27	Victorian box	Remove	No	On-site	Within new parking lot

Appraisal of Value

The City of Hayward requires that the value of all of the surveyed trees be established. To accomplish this, I used the standard methods found in *Guide for Plant Appraisal*, 9th edition (published in 2000 by the International Society of Arboriculture, Champaign IL). In addition, I referred to *Species Classification and Group Assignment* (2004), a publication of the Western Chapter of the International Society of Arboriculture. These two documents outline the methods employed in tree appraisal.

The value of landscape trees is based upon four factors: size, species, condition and location. Size is measured as trunk diameter, normally 54" above grade. The species factor considers the adaptability and appropriateness of the plant in the Peninsula area. The *Species Classification and Group Assignment* lists recommended species ratings and evaluations. Condition reflects the health and structural integrity of the individual, as noted in the **Tree Assessment Form**. Location considers the site, placement and contribution of the tree in its surrounding landscape.

The appraised value the 12 trees to be potentially preserved is **\$24,600**. The appraised value of the 15 trees to be removed is **\$40,100**. The appraised value of the four street trees is **\$12,950**, 11 off site trees is **\$13,700** and the 12 on-site trees is **\$28,050**. The appraised value of each tree is shown in Table 4.

For off-site trees (#2-12 and 18-21) the condition value, which is part of the appraisal, was assessed from a limited visual inspection performed from the project property.

**Table 4: Tree Appraisal
 Maple and Main, Hayward, CA**

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Appraised Value
1	Coast redwood	63	Yes	\$ 14,900
2	Chinese tallow tree	10	Yes	\$ 2,300
3	Chinese tallow tree	12	Yes	\$ 2,350
4	Chinese tallow tree	18	Yes	\$ 7,250
5	Chinese tallow tree	8	Yes	\$ 1,050
6	New Zealand Christmas Tree	8	Yes	\$ 1,150
7	New Zealand Christmas Tree	8	Yes	\$ 1,600
8	New Zealand Christmas Tree	7	No	\$ 1,250
9	New Zealand Christmas Tree	9	Yes	\$ 2,000
10	Flaxleaf paperbark	10,9	Yes	\$ 3,400
11	Flaxleaf paperbark	7	No	\$ 950
12	Avocado	14,9,8,5,5	Yes	\$ 700
13	California pepper	20,17	Yes	\$ 700
14	Coast redwood	22,20	Yes	\$ 3,450
15	Coast redwood	18,9	Yes	\$ 1,600
16	Coast redwood	27	Yes	\$ 2,050
17	Coast redwood	18,14	Yes	\$ 2,050
18	Crape myrtle	4	No	\$ 450
19	Crape myrtle	6	No	\$ 900
20	Crape myrtle	5	No	\$ 650
21	Crape myrtle	5	No	\$ 650
22	Windmill palm	11	Yes	\$ 400
23	Windmill palm	7	No	\$ 250
24	Windmill palm	11	Yes	\$ 400
25	Glossy privet	12,10,9,6,5	Yes	\$ 900
26	Blue atlas cedar	30	Yes	\$ 10,900
27	Victorian box	5	No	\$ 450
Total				\$ 64,700

Preliminary Tree Preservation Guidelines

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Design recommendations

1. Project plans affecting the trees shall be reviewed by the Consulting Arborist with regard to tree impacts. These include, but are not limited to, demolition plans, site plans, improvement plans, utility and drainage plans, grading plans, and landscape and irrigation plans.
2. A **Tree Protection Zone** shall be established around each tree to be preserved (Table 5). No grading, excavation, construction or storage of materials shall occur within that zone.

**Table 5: Preliminary Tree Protection Zones
Maple and Main, Hayward, CA**

Tag #	Species	TPZ
6	New Zealand Christmas Tree	TPZ 5 feet
7	New Zealand Christmas Tree	TPZ 5 feet
8	New Zealand Christmas Tree	TPZ 5 feet
9	New Zealand Christmas Tree	TPZ 5 feet
10	Paperbark	TPZ 10 feet
11	Paperbark	TPZ 10 feet
12	Avocado	TPZ 15 feet
18	Crape myrtle	TPZ 5 feet
19	Crape myrtle	TPZ 5 feet
20	Crape myrtle	TPZ 5 feet
21	Crape myrtle	TPZ 5 feet
26	Blue atlas cedar	TPZ 20 feet

3. Accurately locate trunk of trees #6-12, 18-21 and 26.
4. Include trees to be preserved and **Tree Protection Zones (TPZs)** on all construction plans.
5. No underground services including utilities, sub-drains, water or sewer shall be placed in the **Tree Protection Zone**.
6. Irrigation systems must be designed so that no trenching will occur within the **Tree Protection Zone**.
7. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.

Pre-construction treatments and recommendations

1. Fence all trees to be retained to completely enclose the **Tree Protection Zone** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link or equivalent as approved by the Consulting Arborist. Fences are to remain until all grading and construction is completed.
2. Prune trees to be preserved to clean the crown of dead branches 1" and larger in diameter, raise canopies as needed for construction activities. All pruning shall be done

- by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). The Consulting Arborist will provide pruning specifications prior to site demolition. Branches extending into the work area that can remain following demolition shall be tied back and protected from damage.
3. Tree(s) to be removed that have branches extending into the canopy of tree(s) to remain must be removed by a qualified arborist and not by construction contractors. The qualified arborist shall remove the tree in a manner that causes no damage to the tree(s) and understory to remain. Tree stumps shall be ground 12" below ground surface.
 4. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. Tree pruning and removal should be scheduled outside of the breeding season to avoid scheduling delays. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Recommendations for tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Any grading, construction, demolition or other work that is expected to encounter tree roots should be monitored by the Consulting Arborist.
4. Tree protection fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consulting Arborist.
5. Construction trailers, traffic and storage areas must remain outside fenced areas at all times.
6. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Consulting Arborist.
7. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
8. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **Tree Protection Zone**.
9. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.
10. All trees shall be irrigated on a schedule to be determined by the Consulting Arborist (every 3 to 6 weeks April through October is typical). Each irrigation shall wet the soil within the **TREE PROTECTION ZONE** to a depth of 24".

Maintenance of impacted trees

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for

monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of failure of branches or entire trees increases. Therefore, annual inspection for structural condition is recommended.

If you have any questions about my observations or recommendations, please contact me.

HortScience, Inc.

A handwritten signature in black ink, appearing to read "R. Gilpin".

Ryan Gilpin, M.S.
Certified Arborist #WE-10268A



Exhibits

Tree Assessment Map

Tree Assessment Form



Maple and Main Apartments Hayward, CA

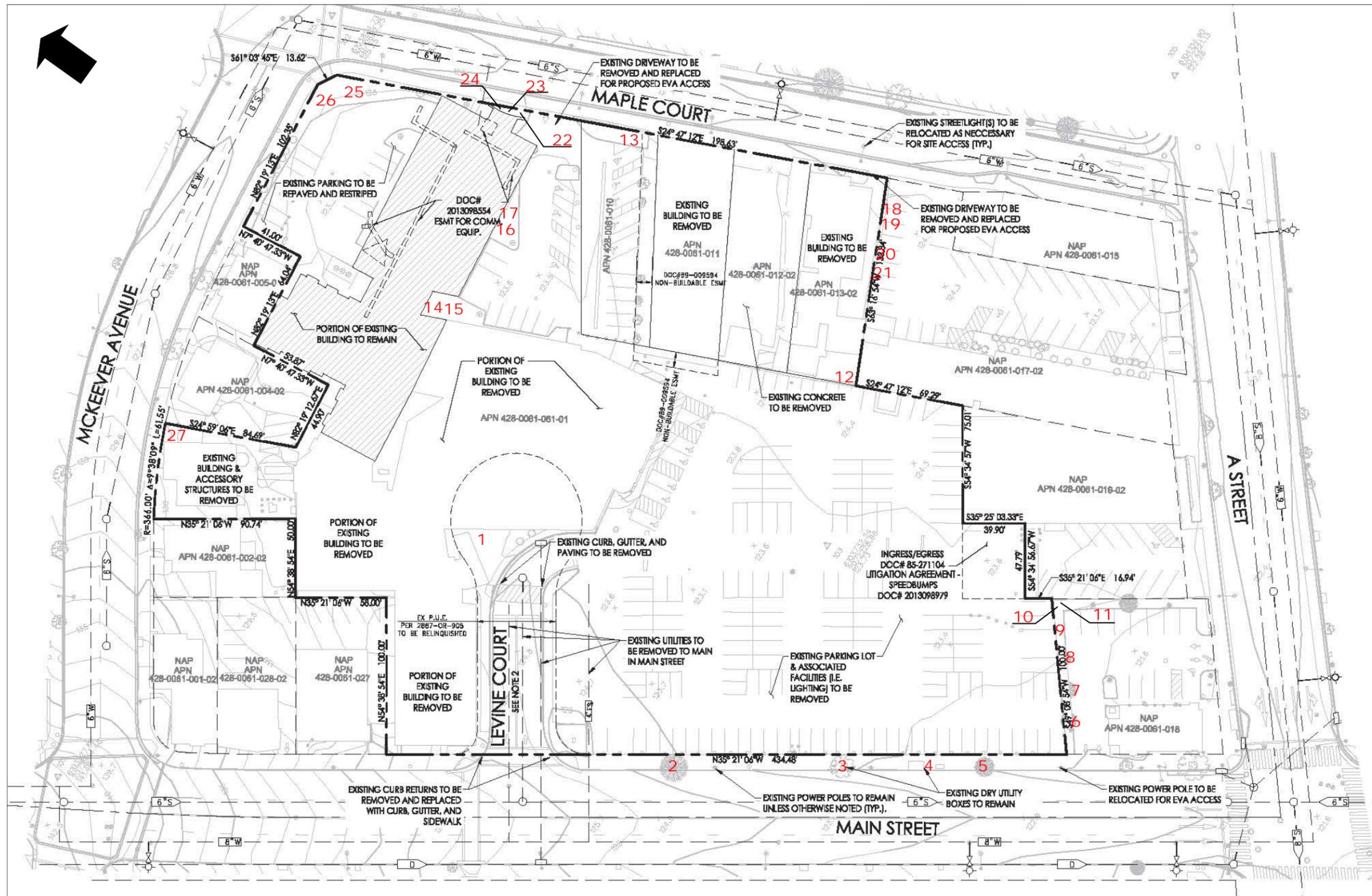
Prepared for:
Wood Rodgers
Pleasanton, CA

November 2015

No Scale

Notes

- Base map provided by:
Wood Rodgers
Pleasanton, CA
- Numbered tree locations
are approximate.



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Tree Assessment

Maple and Main
Hayward, CA
November 5, 2015



Tree No.	Species	Trunk Diameter (in.)	Canopy Spread	Condition 1=poor 5=excellent	Suitability for Preservation	Protected	Comments
1	Coast redwood	63	75	4	Moderate	Yes	Located 10' from building; good form and structure.
2	Chinese tallow tree	10	20	4	Moderate	Yes	Street tree; multiple attachments at 10'; lifting pavement; utilities throughout crown
3	Chinese tallow tree	12	22	3	Moderate	Yes	Street tree; drought stressed; codominant at 15'; utility lines throughout canopy.
4	Chinese tallow tree	18	22	4	High	Yes	Street tree; utilities through crown; multiple attachments at 9'.
5	Chinese tallow tree	8	18	3	Moderate	Yes	Street tree; under utilities; utility box located 18" from tree in planter; near driveway; drought stressed.
6	New Zealand Christmas Tree	8	15	3	Moderate	Yes	Off-site; multiple attachments at 6'; one sided; no tags.
7	New Zealand Christmas Tree	8	19	4	Moderate	Yes	Off-site; multiple attachments at 6'; no tags.
8	New Zealand Christmas Tree	7	15	4	High	No	Off-site; no tags.
9	New Zealand Christmas Tree	9	18	4	Moderate	Yes	Off-site; no tags; multiple attachments at 8'.
10	Paperbark	10,9	19	4	Moderate	Yes	Off-site; no tags; codominant at base.
11	Paperbark	7	19	4	Moderate	No	Off-site; no tags; good crown but one sided to E; suppressed under adjacent Paperbark.
12	Avocado	14,9,8,5,5	21	2	Low	Yes	Off-site; no tags; decay in lower trunk; multiple attachments at 3'; history of branch failure; poor form and structure.
13	California pepper	20,17	8	1	Low	Yes	Topped ;poor form and structure.
14	Coast redwood	22,20	68	4	Moderate	Yes	Located 10' from building; good form and structure.
15	Coast redwood	18,9	48	4	High	Yes	Sucker hedge at bottom of tree; 10.5' from building.; good form and structure.
16	Coast redwood	27	60	3	Moderate	Yes	Thin canopy; sucker hedge at base; crooked form; 7.5' from building.

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Tree No.	Species	Trunk Diameter (in.)	Canopy Spread	Condition 1=poor 5=excellent	Suitability for Preservation	Protected	Comments
17	Coast redwood	18,14	57	4	High	Yes	Sucker hedge at base ;codominant at base; 6' from building.
18	Crape myrtle	4	10	4	High	No	Off-site; good form and structure; multiple attachments at 5'.
19	Crape myrtle	6	15	4	High	No	Off-site; good form and structure; multiple attachments at 4'.
20	Crape myrtle	5	13	4	High	No	Off-site; good form and structure; multiple attachments at 5'.
21	Crape myrtle	5	12	4	High	No	Off-site; good form and structure; multiple attachments at 6'.
22	Windmill palm	11	19	4	High	Yes	Brown trunk height 12'; 3' from building.
23	Windmill palm	7	20	3	Moderate	No	Leaning toward street; 3' from building; brown trunk height 4'.
24	Windmill palm	11	18	4	High	Yes	2' from building; brown trunk height 9'.
25	Glossy privet	12,10,9,6, 5	25	2	Low	Yes	Topped; drought stressed; thin crown; multiple attachments at 2'.
26	Blue atlas cedar	30	38	3	Moderate	Yes	Drought stressed; history of multiple failures; codominant at 8'; good vigor.
27	Victorian box	5	8	3	Low	No	Under utility lines to house; full crown but one sided; poor form and structure.