Consulting Arborist's Report
December 2, 2013

Tree Evaluation and Preservation Study

MGA, Chatsworth

Prepared for:

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Introduction

Background

Killifer Flamang Architects and AHBE Landscape Architects are preparing a new site plan for the new MGA Headquarters in Chatsworth. The property is 23.6 acres in size. The facility is located adjoining the northeast corner of Winnetka and Prairie. This site was the former location of the Los Angeles Times.

A flood control channel runs along the west edge and bends around below the south edge, just north of the railroad tracks. Most of the site is relatively level with large paved parking areas. A number of trees have been planted west of the flood control channel, between the sidewalk and channel. These and the street trees along Prairie are included in this study with the other site trees.

The present plans include retaining the existing main building, but parking, outbuildings, landscaping, and most of the surrounding infrastructure will be removed and replaced. The health and condition of selected mature trees on site are being evaluated in this report to aid in the planning process and potential selection of better quality trees for transplanting and reuse in the new landscape being designed. The future health of the trees that remain will depend on the existing health, quality of transplanting work, care and protection during construction, providing a suitable environment for their future growth and proper maintenance. Many of the trees here are a significant asset to the property and community, while many of the more remote trees are not in adequate condition or practical to transplant.

Not every tree now on this property was inspected, but only those close to or over 8-inch trunk caliper. There are no protected, endangered or rare species of trees on this property. All of the trees covered within this report are non-native exotic species trees, begun in nurseries. The only trees on site not planted are weed species that grew from bird-dropped or wind-blown seed, by the flood control channel wall or east retaining wall. The Mexican fan palms were also not included.

Assignment

Arborgate Consulting was asked by Ms. Lise Bornstein, of Killefer Flammang, to propose a study of the trees now growing at the former Los Angeles Times facility to Mr. Leon Benrimon, of SkyTech Management:

Provide arboricultural evaluation of trees' health and condition, professional opinions and report as appropriate for the City of Los Angeles.

In accordance with the City of Los Angeles' Tree Preservation Ordinance No. 177,404, evaluate and inventory all protected trees with trunk diameters of four inches and greater and all non-protected trees with trunk diameters of eight inches or greater. Any off-site trees that immediately adjoin the subject property must also be included.

The tree inventory will include common and botanic names, trunk diameter (DBH), height, health, and structure evaluation. Each tree will be tagged with number tags for positive identification and hand marked on the provided survey.

Tree report will include photographs as need to illustrate and explain important points. All protected trees will be photographed and included.

The tree protection plan will include tree protection specifications and necessary clearances for all trees that are outside grading or building outlines and can possibly remain based on their health and soundness. An index and glossary of terms will also be included.

Work Not Included

1. A specific professional survey mapping the trees listed in the report is not included in this proposal. The determination of the *precise* location of trees will be the responsibility of others.
2. Treatment of any discovered pests, diseases, or other problems are not included.
3. The requested consulting services do not include a full formal hazard analysis. A detailed hazard analysis is a time consuming scientific examination of each individual tree's structure and setting.
4. Pruning specifications are not included.
5. Field supervision and other additional services such as monitoring or meetings are not included, but if such services are requested, they will be billed as extras at $180 per hour, including travel time.

Executive Summary

Overview of Conditions and Recommendations

A mixture of three hundred-ten trees spread mostly over about six species, including: a large number of: Aleppo pine, carrotwoods, lemon gums, bottle trees, paperbark, and Majestic Beauty magnolia, were evaluated in this study. Their sizes, health and conditions are found in the enclosed Matrix of Findings, which occurs later in this report. Also included are adjoining street trees on Winnetka and Prairie.

The potential for transplanting and reuse of selected specimen trees here is very limited. Eucalypts and paperbarks do not transplant reliably well, the Canary Island pines are so large that transplanting will be very difficult and expensive, and frequent irrigation and soil compaction have resulted in shallow roots. The Aleppo pines are mostly leaning, which makes transplanting less practical. When roots are closer to the surface, a larger box should be used to keep an adequate amount of roots for health and stability of the trees.

Large transplanted trees will need extra care and attention, compared to trees brought in young from nurseries for the new landscape design. Good soil preparation and better hydrozone management can increase the lifespan of future trees compared to the existing trees.

All the bottle trees are found along the inside western edge of the site. The magnolias are all around the building. There is a large unused portion at the south end of the site containing paperbarks, lemon gums, Aleppo pines, carrotwoods and a few other odd species. This area is unmaintained and covered mostly with grassy weeds. The tree species that need more water,

like the paperbarks, are in the worst health. The other trees are in various states of health and structural condition. There are many fallen limbs and several fallen trees.

The area between Winnetka and the flood control channel is in similar condition. The southern part of this narrow strip appears to have been a homeless camp that was recently cleared, but leaving a fair amount of debris. The southern end has been recently graded, leaving fill soil over the base of many trees and the soil has been compacted. Most of the trees in this area have injuries from impacts of the grading equipment. A number of Mexican fan palms appear burned and then cut off about a foot above grade. There is a row of Mexican fan palms on the south side of the channel as it sweeps around and follows the railroad tracks. They all appear drought stressed and in declining health.

Carrotwood trees are planted in the parking islands, and most are in declining health and poor structural condition. Much of the interior portion around the building is still irrigated, but the parking islands are drier that the other interior areas.

Due to compacted soils and turf grass cultural practices, the roots of the trees around the building are especially shallow in lawn areas. With compaction limiting roots to the top foot or less in lawn areas, it is easy to see why there are so many exposed roots.

The street trees along Prairie have outlived their usefulness and need to be replaced. The sidewalks are very lifted and the trees are leaning. Bradford pears are prone to many structural defects, and are now near the end of their typical lifespan.

There were few pest or disease issues observed on site, other than leaf damage on the lemon gums from psyllids. This is probably a main factor in their sparse foliage and weaker health.

The Aleppo pines are more pest prone and subject to borers as they get drought stressed. Aleppo pines also have more common structural and root defects. Most of the Aleppo pines on site are adequately healthy, but are structurally weak.

Tree health varies widely by location and species. The main factors contributing to reduced tree health are poor soil management, limited soil volume, shallow soils, soil compaction, hydrozone incompatibility, and competition from aggressive ground cover plantings. These are fairly typical in mature commercial landscapes.

The two potential areas where trees might be able to remain in place during construction are the west edge, west of the flood control channel, and the area just north of the main building where the magnolias are.

Where possible, preservation and protection in place is the best option. If there is a special need for certain large specimen trees in the new landscape, 62 trees could reasonably be transplanted, but it probably would not be reasonable to transplant all 62 or even most of these. One hundred and one trees are recommended for removal regardless of the new design.

Findings

Introduction

All trees were tagged with consecutively numbered aluminum tags from 2001 to 2310. The tags are roughly on the north side of the tree, generally about six to seven feet up, except on small trees with low branching and little clear trunk. The nail was left sticking out about half an inch to allow for trunk expansion before engulfing the tag. In a year or two, the nails should be backed out or removed before they are engulfed. The tags correspond to the tree inventory and map, and provide a positive identification of the trees so that protective fencing, removals and maintenance can be more confidently applied.

General

The bulk of the trees on this site are (31) *Pinus halepensis*, Aleppo pine; (18) Cedrus deodara, deodar cedar; (34) *Cupaniopsis anacardioides,* carrotwoods; (67) *Corymbia* (*Eucalyptus) citriodora*, lemon gums*; (31) Brachychiton populneus*, bottle trees; (18) *Melaleuca quinquenervia,* paperbark; and (18) *Magnolia g. 'Majestic Beauty'*, Majestic Beauty magnolia. There are 217 trees between these seven types on this site. This represents 70 percent of all trees concentrated in seven of the species. The most common species, representing 22 percent of the trees, has the most pest issues, the lemon gum, with the Aleppo pine, representing 10 percent, in close competition for pest problems.

When a large percentage of the trees in large commercial grounds are of the same or of a few species, it is considered a monoculture. The risk is that if a pest or disease is introduced or flares up that it will be more intense and will affect more trees than can be dealt with. In California, there are many new pests of Eucalyptus and new ones, like the lemon gum psyllid, arrive almost annually.

Tree Preservation

Numerous highly valuable trees in relatively good condition will merit the care to keep them in place during construction. Not knowing how schematic the plot plan is, clearance and protection recommendations are provided for all the trees that are in at least "B" health. Trees in just stable or "C" health will certainly decline in health during the rigors of grading and construction. Trees in declining health "D" or below are not suitable or attractive assets for the new project. Of course, even trees in good or excellent health can be put into a declining health condtion if protection measures are not followed.

When construction and new landscaping occurs, good protection must be given the trees to remain. They must be properly watered even when the irrigation system is shut down. The roots of many trees are close to the surface and good protection must keep equipment and even foot traffic out of their critical protection zone. The soil must not be compacted by heavy equipment or foot traffic. Reducing compaction around trees can only relieve a small percentage of the compaction. Trenching and roto-tilling can also destroy much of the critical roots. The stability of the trees can be jeopardized, but not seen after trenching and excavation are covered over. Only good secure fencing offers adequate protection during construction. After construction, when the fences come down and landscaping begins, the trees may be at even more risk from the landscape contractors. Irrigation, grading and trenching must be carefully controlled with the needs of the existing trees kept foremost.

The present planning and engineering process will indicate if in fact these trees can remain in place. Protecting trees in place is far more likely to be successful than transplanting. To preserve the trees during construction may take only a few minor modifications to the grading plan or overall layout. Tree moving can be a costly and detailed undertaking. Not all the trees are worth the effort and expense of transplanting. The useful life span of these trees and their present appearance and condition dictate balancing the cost of transplanting or preservation in place with their value and remaining lifespan.

The Recommendations Matrix specifies the radius of a circular zone of protection for each tree that might stay in its present location. This clearance recommendation is expressed as a radius from the trunk based on the age class, species, and health and as a factor of trunk diameter. To be effective, this protection radius should be securely fenced and kept free of equipment, root disruption, storage and grading. Irrigation must be monitored and applied to the entire protected root zone, not just the base of the trunk. Dust must be controlled and the foliage should be rinsed off as needed during dusty periods.

Since nearly all of these trees are too large to replace in kind and size, preservation in place is the most effective means of preservation.

Transplanting

Transplanting mature trees is one way to keep the most desirable trees when construction would otherwise require their removal. The typical cost is about two-thirds the cost of planting a new tree the same size, assuming trees the same size could be purchased from nurseries or tree farms, delivered and planted. However, not all mature transplanted trees will make the transition and re-establish. Some may die in the process. Some may look unsightly for years during recovery. Some, like the eucalypts and paperbarks have little chance of surviving transplanting. The amount of risk involved depends on species, health, time of year, and root condition. The proper season for most of the trees is late fall or winter, except the palms, carrotwood and jacaranda trees, which should be transplanted in late spring or early summer.

Cupaniopsis anacardioides transplant easily in early summer. There are few really good ones on site. If there is a serious need for a 10 to 12-inch DBH carrotwood, one or two might be adequate to the purpose.

The Mexican fan palms south of the flood control channel might be able to stay in place, but need more irrigation. They are very inexpensive and not worth transplanting. They are too stressed to recover well. I advise against transplanting any of these palms.

The pines are relatively easy to transplant in late fall or winter. The Canary Island pines are unusual in that they are one of only a few trees that can keep a taproot late into life. This is one reason they are often planted in parking lots – they seldom damage paving in deeper loose soils. If you can transplant them in the proper season, there are several worthwhile specimens, but not the ones along Winnetka.

Since the cost of transplanting is so high and the resolve to do so limited, I have only listed a few for possible transplanting so that depending on budget, need, and desire the most suitable trees can be taken from that list.

Pests and Disease

Several minor pests have impacted the health of MGA's trees.

Almost any plant can get aphids or scale in spring, including jacarandas and magnolias, the primary impact, being a reduction in vigor and distortion of the foliage. Aphids and scale crawlers are easy to control if you can spray them with a strong stream of water. Systemic insecticides usually provide season long control.

The reduced health of the lemon gums may be reduced due in part to due to drought stress. However, the lemon gums in most of southern California have been affected by lemon gum psyllids. The loss of carbohydrates due to feeding by these insects and the dropping of foliage has caused them to be in reduced health and more sparsely foliated.

The Aleppo pines are frequently infested by spider mites and Oligonychus mites. Only the one west of the main building had symptoms of a significant infestation. As drought stress increases so does the risk of infestation by borers, which then have the opportunity to cause death.

The evergreen pears in the strip along Winnetka are sparse and in reduced health. The sparse foliage may be partly due to the season and drought stress. However, there were indications of past fire blight (Erwinia) infections and leaf spot (Entomosporium).

Mexican fan palms have almost no pests or diseases. However, climbing gaff wounds and other trunk injuries are often infected by pink rot, *Gliocladium vermoeseni*. Almost any weak palm can be infected with pink rot. Usually the gaff wounds are only in the outer cortex and the decay is only a surface rot that does not seriously affect the strength, but on rare occasion, more serious wounds have deeper decay that can lead to trunk failure. The status of this disease and the health of the palms were not examined.

The dieback evident in a few of the trees could be due to cultural or environmental stress factors, or nearing the end of a short lifespan. The flush cuts found on a number of trees can be expected to lead to decay. The more sub-tropical trees, like eucalypts, jacarandas or carrotwoods, will take longer to decay. Trees in weak health will decay sooner than those in good health. Future construction impacts on the trees may cause stresses sufficient to allow disease to progress and decay to advance.

Tree Structure and Pruning

Common structural defects found on the MGA property include, but are not limited to epicormic shoots, codominant leaders, included bark, flush cuts, overly long, end-heavy limbs, doglegs, shallow rooting, and tear-outs. Some such defects can be prevented or cured through corrective pruning or early training. However, once a large failure occurs, e.g. a tear-out or up-rooting, the tree will probably need to be removed. Poorly pruned trees need re-pruning long before a tree that has been properly pruned. Topping, heading, flush cuts and lion tailing are evidences of poor pruning. Topping and heading are so destructive they are decried in California State Government Code 53067. Fortunately heading, flush cuts and lion-tailing are only common in a few species around the site.

Turf grass maintenance has caused a number of injuries to exposed roots and the lower trunks. On some species these wounds may become infected or decay. Keeping the turf back and a mulch bed around trees in turf will reduce this kind of damage.

Many strongly excurrent trees, such as Canary Island pine, need no pruning except to control the occasional codominant leader or shorten an overly long limb. However, trees like the Aleppo pine in turf are more likely to lose apical dominance and need more pruning. Their limbs are more likely to grow too long and have weaker wood due to high nitrogen applied for the turf. They are also more shallow rooted and need to be thin pruned or shortened to reduce wind load.

Trees in dense groups, especially toward the center of such groups, tend to be sparser or have diminished trunk taper and have overly long limbs at the edge of the group, reaching for light. This was the case in the large open area at the south. Trees adjoining buildings are also in effect edge trees, but without the effect of opposite interlocking roots. Many of the edge trees in such groups have bowed or leaning trunks due to reaching for light when they were young. These trees are usually stable due to interlocking roots on the tension side, but if their grip on the side, opposite the lean, is compromised by trenching or digging, then pruning and monitoring, or possible removal, is called for.

Transplanting of leaning or one-sided trees should be limited due to the amount of roots cut during their boxing. Leaning or one-sided trees, although sometimes picturesque in the landscape design, practically should not be transplanted. Pruning to reduced one-sidedness should not be considered if they remain in place.

Pruning should be delayed for years after transplanting to maximize the amount of foliage. Photosynthesis produces or fuels the production of new roots, new conductive vessels, and pest repelling chemicals. The growing tips of branches are where root-stimulating hormones are produced.

General Soils Discussion

One of the major effects of years of irrigation and lawn mower traffic is soil compaction. Gradually, this shortens the natural lifespan of trees that grow in corporate business parks. The effect of compacted soil on trees slowly becomes obvious. Other plants that happen to be rooted in compacted soil, shrubs, perennials, even turf, can suffer from compaction as well, but show the effects sooner. The shallow and exposed roots of trees are a symptom of this compaction. Root systems demand certain conditions and simply will not grow in compacted soil, unless it is very near the surface.

Natural topsoils are actually living communities of roots and fungi, algae, bacteria, nematodes, earthworms, etc. Many of these organisms are essential to healthy roots. However, for this ecosystem to be suitable for all the soil residents a critical amount of organic matter and pore space is needed. Compaction crushes the poor space and limits the amount of oxygen and water that can be held in the soil.

Several signs of compacted soil are:

- Standing water on the soil surface long after moderate rain.
- Roots of plants, especially trees, close to or exposed on the surface.
- Yellowing of foliage, especially in early spring, coupled with diminished development of leaves throughout the growing season. Although, that may indicate diseased roots or nutrient deficiency as well. Lab work or crosschecking with foliar and soil analyses may be required.
- Presence of certain grasses or weeds that tolerate compacted soils, e.g. plantain.
- Incidence of various diseases that arise from poor drainage and lack of oxygen.
- Resistance to penetration of the soil by shovel, pick, knifepoint or probe.

At this site, large areas had been planted in turf for thirty years or more, and the topsoil below has deteriorated. Individual symptoms may occur on uncompacted soils in shallow-rooted tree species such as magnolias, for example, exhibit roots near the surface even on uncompacted soils.

Significant effects of soil compaction as they affect management of the site include:

- Crusting. Crusting occurs when the soil aggregates are pulverized and the fines fill the smaller pores. In addition, traffic compacts the surface more than lower soil depths.
- Decreased infiltration. The crust formation coupled with the reduced pore space and its smaller average-pore size reduces the infiltration capacity of the compacted soil even under heavy rainfall, creating runoff and soil erosion.

- Increased density. As soil fragments fill voids in compressed soil, the total pore space is reduced and the larger air-filled pores are destroyed or at least reduced in size.
- Decreased water-holding capacity. Since water is held in the pore space, any pore space decrease will generally decrease water-holding capacity. Drought symptoms may be shown even on frequently irrigated trees.
- Decreased soil aeration. Diffusion of gases, such as oxygen and carbon dioxide, into and out of the soil can be greatly reduced. Pores become discontinuous, and the pores that are water-filled act as a barrier to diffusion of gases. Even though the surface soil may be the only portion compacted, the soil beneath is "capped off" reducing the usefulness of the deeper soil to the trees' root system.
- Root impedance. Roots penetrate only pores as large as or larger in diameter than their root tip; the root will penetrate a smaller pore only if the soil is loose. If the soil is firm, the root simply cannot penetrate the smaller pore.

Because soil compaction only becomes obvious to most people a year or more after it happens, a smarter approach is to prevent soil compaction before it happens. The best and most reliable procedure for preventing it is to specify compaction-resistant soils in the redesign process, together with other design elements, like planting trees apart from the turf and turf irrigation. Mulching in shrub areas or around trees helps prevent soil compaction and reduces compaction over time, improves the soil structure, reduces weed growth and conserves water. Bare, wet soil compresses easily. Lawn areas tend to compact because of both higher moisture levels and higher levels of foot and lawn mower traffic. These methods should be considered for use in the new landscape.

Explanation of Health Ratings

Every tagged tree was evaluated for relative health. In the matrix to follow they are rated on an A to F scale, similar to classroom grades, a health rating of A is excellent, B is good, C is adequate, D is declining, but probably recoverable, and F is dead, near dead, and probably not recoverable. Indications of health considered include leaf color, foliage density, growth rate, presence of pest or disease, and dieback.

Explanation of Abbreviations Used in the Matrix

The, species, size, relative health, beauty, comments, pest and disease issues, location, and maintenance issues are listed in the matrix below. Abbreviations used in the matrix are decoded below. Underlined abbreviations indicate severity. An "m" in front of an abbreviation indicates minor significance e.g., mDb = minor dieback. Arboricultural terms are defined in the glossary.

The following matrix and the one found in Recommendations are also being offered combined as an Excel file, via compact disk or via e-mail.

1s=one-sided
  1sRF = one sided root flare
2long = limb too long
brk = break
Chlor = chlorotic
Circ = circling roots
Cod=codominant
Cr=crowded
  CrR = crowded roots
  Cr-S = crowded scaffolds
  Cr-T = crowded trunks
Crkd = cracked
cv = cultivar
DC = drop-crotch
Db=dieback
DBH – Diameter at breast height, i.e. 4.5'
Dk=decay
  BDk=basal decay
  RDk=root decay
  TDk = trunk decay
DL=Dog-leg
DW=dead wood
EH=end heavy
Epi = epicormic shoots
FC=flush cut
Gird = girdling root or wire
Hd = headed
Inc.=included bark
Inj=injury
  Binj=basal injury
  Rinj=root injury
  Tinj = trunk injury
LB = low branched
Lt = lion-tailed
M blight = mower blight
NoRF = no root flare
OL = over-lifted
Sh = shallow roots
Sp = sparse
Stump sprts = stump sprouts
Top'd = topped
T-bow'd = trunk bowed
TO=tear out
Xing = crossing limbs

Matrix of Findings

Each tree in this study was labeled with consecutively numbered metal tags (from 2001-2310). Common names for each species were presented in the appendix. The size (DBH, height and width), species, health, the description of defects in roots, trunk, limbs and foliage, and other issues (comments) of each tree are listed below. Arboricultural terms are defined in the glossary.

Diameter at breast height (DBH) is determined according to methods described in the 9th edition of the *Guide for Plant Appraisal.* A Biltmore stick was used to measure trees over eight inches and tree calipers were used to measure trees less than eight inches in trunk diameter.

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2001	Pinus halepensis	3.6	14x8	B	Okay	1s	Okay	Covered	Seedling of #2002
2002	Pinus halepensis	25	50x30	C	Cod	TO inc	Sparse	Okay	
2003	Pinus halepensis	27	50x30	C	Cod lean	Lt	Okay	Okay	
2004	Pinus halepensis	28	50x40	B	Cod lean	OL 2long	Okay	Okay	
2005	Pinus canariensis	18	55x30	C	Okay	2long	Okay	1sRF	
2006	Pinus halepensis	27	50x40	B	Cod top	2long	Okay	Okay	
2007	Cupaniopsis anacardioides	9	18x20	C	Cod	Inc.	Sparse	Shallow	
2008	Cupaniopsis anacardioides	4.5	15x15	D	Cod inj	DL	Sparse	Okay	
2009	Cupaniopsis anacardioides	8	15x18	C	Cod	Inc.	Okay	Shallow	
2010	Cupaniopsis anacardioides	10	16x20	C	Cod	Inc.	Okay	Shallow	
2011	Cupaniopsis anacardioides	10	18x18	D	Cod	Inc.	Sparse	Shallow	
2012	Cupaniopsis anacardioides	11	18x18	D	Cod lean	FC inc	Sparse	Shallow	
2013	Pinus halepensis	31	45x45	B	Cod lean	DL OL	Sparse	Okay	
2014	Pinus halepensis	36	50x45	B	Lean	2long	Okay	Okay	
2015	Brachychiton populneus	12	20x18	B	Bent	2long	Okay	Okay	Suppressed
2016	Brachychiton populneus	6	15x15	C	Cod	2long	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2017	Brachychiton populneus	14	18x18	B	Cod	2long	Okay	Okay	
2018	Brachychiton populneus	13	20x18	C	Cod	2long	Okay	Okay	
2019	Brachychiton populneus	10	18x16	C	Cod inj	2long	Okay	Okay	
2020	Brachychiton populneus	17	22x20	B	Cod	2long	Okay	Circ	
2021	Cupaniopsis anacardioides	11	20x22	C	Cod	Cr inc	Sparse	Shallow	
2022	Cupaniopsis anacardioides	9.5	18x18	D	Cod	Inc.	Sparse	Shallow	
2023	Cupaniopsis anacardioides	15	20x22	C	Cod	DL inc	Okay	Shallow	
2024	Cupaniopsis anacardioides	10	15x10	D-	Broke	Epi	Okay	Db	
2025	Cupaniopsis anacardioides	11	18x20	C	Cod	Cr inc	Sparse	Shallow	
2026	Cupaniopsis anacardioides	11	20x20	D	TO cod	Inc.	Sparse	Shallow	HAZARD
2027	Cupaniopsis anacardioides	12	18x22	D	Cod	DL inc	Sparse	Okay	
2028	Cupaniopsis anacardioides	11	18x22	D	Cod	Inc.	Sparse	Shallow	
2029	Cupaniopsis anacardioides	11	18x16	D	Cod	Inc.	Sparse	Shallow	
2030	Cupaniopsis anacardioides	10	18x20	C	Cod	Inc.	Pale	Shallow	
2031	Cupaniopsis anacardioides	4	14x12	D	TO cod	Inc.	Sparse	Shallow	
2032	Brachychiton populneus	10	12x14	C	Bent cod	Inc.	Okay	No RF	
2033	Brachychiton populneus	23	38x24	B	Cod	2long	Okay	Shallow	
2034	Fraxinus uhdei	4, 3, 5, 5	24x16	D	Cod	Inc.	Sparse	No RF	Stump sprouts by channel
2035	Brachychiton populneus	16	23x16	C	Cod	2long	Sparse	Shallow	
2036	Brachychiton populneus	17	22x18	B	Cod	Inc. 2long	Okay	Okay	
2037	Cupaniopsis anacardioides	10x2	12x10	B	Cod	Inc.	Okay	Covered	stump sprouts
2038	Cupaniopsis anacardioides	8	20x18	C	Cod	Inc.	Sparse	Shallow	
2039	Cupaniopsis anacardioides	10	17x20	C	Cod	Inc.	Top sparse	Shallow	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2040	Cupaniopsis anacardioides	8	14x18	C	Cod lean	Cr inc	Okay	Shallow	
2041	Cupaniopsis anacardioides	9	14x18	B	TO cod	Cr inc	Okay	Okay	
2042	Pinus halepensis	25	55x28	C-	Okay	Okay	browning	Okay	
2043	Cinnamomum camphora	5	12x12	D	Cod	Hd Db	Chlor sparse	Okay	
2044	Brachychiton populneus	13	22x20	C	Cod	Inc. 2long	Okay	Okay	
2045	Brachychiton populneus	14	25x18	C-	Cod	DL 2long	Sparse	Okay	
2046	Brachychiton populneus	15	30x20	C	Cod	DL 2long	Okay	Okay	
2047	Brachychiton populneus	12	28x20	C	Cod	DL 2long	Okay	Circ	
2048	Brachychiton populneus	13	30x20	C	Cod	Brk 2long	Okay	Okay	
2049	Brachychiton populneus	17	25x25	B	Cod	DL 2long	Okay	Okay	
2050	Brachychiton populneus	15	23x25	B	Cod	2long	Okay	Okay	
2051	Brachychiton populneus	12	22x25	C	Bent	Xing brk	Okay	Okay	
2052	Brachychiton populneus	13	20x22	B	Cod	2long	Okay	Okay	
2053	Brachychiton populneus	14	20x22	B	Cod	2long	Okay	Shallow	
2054	Brachychiton populneus	17	20x26	B	Cod	DL brk	Okay	Okay	
2055	Brachychiton populneus	16	26x28	B	Cod	2long	Okay	Okay	
2056	Brachychiton populneus	14	20x24	B	Cod	2long	Okay	Okay	Squat
2057	Brachychiton populneus	15	22x26	C	Cod inj	2long	Okay	Okay	
2058	Brachychiton populneus	18	26x26	C	Cod	DL 2long	Okay	Okay	
2059	Brachychiton populneus	16	24x26	C	Cod	DL 2long	Okay	Okay	
2060	Brachychiton populneus	9	20x18	C	Bent cod	DL awk	Okay	Okay	
2061	Fraxinus uhdei	6	22x18	C	Cod	Cr	Sparse	Crowded	By channel
2062	Brachychiton populneus	19	24x24	C	Cod	2long	Okay	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2063	Fraxinus uhdei	4, 4	24x10	C	Cod	Inc.	Sparse	Crowded	By channel
2064	Corymbia citriodora	9	27x12	B	Cod top	Sags 2long	Okay	Okay	1 sided
2065	Corymbia citriodora	9, 5	28x18	B	Cod	1s inc	Okay	Okay	
2066	Pinus halepensis	17 b	30x22	C	Cod LB	2long	Sparse	1sRF	
2067	Brachychiton populneus	13	20x12	B	Cod	Inc. 2long	Okay	Okay	
2068	Brachychiton populneus	7	18x18	B	Cod	Inc.	Okay	Okay	
2069	Brachychiton populneus	8	17x16	B	Cod	2long	Okay	Okay	
2070	Corymbia citriodora	9	32x24	C	Cod	1s 2long	Sparse	Okay	
2071	Pinus halepensis	22	45x40	C	Lean	1s 2long	Sparse	Shallow	
2072	Pinus halepensis	20	50x30	C	Cod lean	1s Cr2073	Sparse	Okay	
2073	Pinus halepensis	21	50x30	B	Cod	1s inc	Okay	Okay	
2074	Pinus halepensis	20	50x30	C	Cod	2long	Sparse	Shallow	
2075	Pinus halepensis	17	45x25	C	Cod	Cr inc	Sparse	Shallow	
2076	Pinus halepensis	16	50x20	C	Cod top	Inc.	Sparse	Shallow	
2077	Corymbia citriodora	19	45x30	C	Cod	1s	Sparse	Okay	
2078	Fraxinus uhdei	5.5	20x10	C-	Cod	Okay	Sparse	Okay	By channel
2079	Fraxinus uhdei	4.5, 2.5	20x10	C-	TO cod	Inc.	Sparse	Okay	By channel
2080	Corymbia citriodora	23	50x40	C	Cod	1s	Okay	Okay	
2081	Corymbia citriodora	12	45x25	C-	Cod	Brk	Sparse	Okay	
2082	Pinus halepensis	10	35x18	B	Okay	1s	Okay	1s	By channel
2083	Fraxinus uhdei	6	22x10	C-	Cod	Inc.	Okay	Crowded 1s	By channel
2084	Corymbia citriodora	18	35x30	D	Cod lean	Xing	Sparse	Okay	
2085	Corymbia citriodora	19	50x30	C-	Cod	2long	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2086	Melaleuca quinquenervia	10, 10, 10	30x20	C-	Cod	inc	Db sparse	Okay	
2087	Melaleuca quinquenervia	9, 9, 10	30x18	D-	Cod	Inc.	Db sparse	Okay	
2088	Melaleuca quinquenervia	9	30x15	C	Cod	Inc.	Okay	1sRF	
2089	Corymbia citriodora	10	40x20	C	Cod	2long	Sparse	Okay	
2090	Corymbia citriodora	16	45x22	C	Cod	2long	Sparse	Okay	
2091	Corymbia citriodora	16	45x30	B	Cod	DL 2long	Okay	Okay	
2092	Corymbia citriodora	17	50x35	C	Okay	2long	Sparse	Okay	
2093	Corymbia citriodora	8	40x22	D	Okay	2long	Sparse	Inj	
2094	Corymbia citriodora	12	35x35	D	45° lean	1s DL	Sparse	Okay	
2095	Corymbia citriodora	16	50x30	B	Cod	2long	Okay	Okay	
2096	Corymbia citriodora	10	40x20	D	Bowed	1s	Sparse	Okay	
2097	Pinus halepensis	22	50x40	C	Lean	1s 2long	top brown	Okay	
2098	Pinus halepensis	22	50x30	C	Broke top	1s	Top sparse	Okay	
2099	Pinus halepensis	20	50x30	F	Horizontal	Okay	Brown	Brk	Borers
2100	Pinus halepensis	18	50x30	C-	Cod	1s cut	Sparse	Okay	
2101	Corymbia citriodora	13	45x22	C-	Cod	Okay	Sparse	Okay	
2102	Corymbia citriodora	12	45x28	C	Cod	2long	Sparse	Okay	
2103	Corymbia citriodora	11	45x20	D	Cod	Okay	Sparse	Okay	
2104	Corymbia citriodora	13	45x30	C	Cod	2long	Sparse	Okay	
2105	Corymbia citriodora	12	45x30	C	Cod	2long	Okay	Okay	
2106	Cupaniopsis anacardioides	9	18 x 22	D	Cod	Cr inc	Sparse	Shallow	
2107	Pinus halepensis	14	30x30	C	45° lean cod	Inc.	Okay	Shallow	
2108	Pinus halepensis	22	50x34	C	Cod top	2long inc	Sparse	Okay	
2109	Pinus halepensis	18	50x30	C	Okay	2long	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2110	Pinus halepensis	8	22x16	B	Okay	Okay	Okay	1s	By channel
2111	Corymbia citriodora	26	50x40	C	Cod	Brk 2long	Sparse	Okay	
2112	Corymbia citriodora	20	50x30	C	Cod	2long	Sparse	Okay	
2113	Corymbia citriodora	12	40x25	C-	Cod	1s 2long	Sparse	Okay	Cr by 2112 & 2113
2114	Corymbia citriodora	18	35x35	D	Cod	2long	Sparse	Okay	
2115	Corymbia citriodora	22	50x40	C	Cod	2long	Sparse	Okay	
2116	Pinus halepensis	22	50x30	B	Okay	2long	Okay	Okay	
2117	Pinus halepensis	18	45x35	B	Okay	2long	Okay	1sRF	
2118	Pinus halepensis	26	50x40	B	Cod	2long	Okay	Circ	
2119	Cupaniopsis anacardioides	10	18x20	D	Cod	Inc.	Db sparse	Shallow	
2120	Cupaniopsis anacardioides	10	18x22	D	Cod	Inc.	Db sparse	Okay	
2121	Pinus halepensis	18" b	45x25	C	45º lean cod	Inc.	Okay	Circ	
2122	Corymbia citriodora	10	38x22	C	Cod	1s 2long	Sparse	Okay	
2123	Corymbia citriodora	11	40x30	C	Cod	2long	Sparse	Okay	
2124	Corymbia citriodora	12	40x30	C	Cod	DL 1s	Okay	Okay	
2125	Pinus halepensis	17	45x35	B	50º lean	2long	Okay	Circ	
2126	Pinus halepensis	17	45x30	C	50º lean	1s 2long	Okay	Circ	Crowded
2127	Pinus halepensis	18	45x35	C	50º lean DL	1s	Okay	1sRF	Crowded
2128	Pinus halepensis	20	45x30	C	Okay	1s	Sparse	Okay	Crowded
2129	Pinus halepensis	20	45x30	B	Okay	1s	Okay	Okay	Crowded
2130	Corymbia citriodora	14	45x25	C-	Cod lean	2long	Sparse	Okay	
2131	Corymbia citriodora	7	30x13	D	DL	Db	Sparse	Okay	
2132	Corymbia citriodora	19	40x35	C	Cod	Brk 2long	Sparse	Okay	
2133	Corymbia citriodora	17	40x35	C	Cod DL	Brk 2long	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2134	Corymbia citriodora	14	45x35	C-	Cod	2long	Chlorotic + sparse	Okay	
2135	Corymbia citriodora	20	50x30	B	Cod	2long	Okay	Okay	
2136	Corymbia citriodora	16	42x30	C	Cod	2long	Okay	Okay	
2137	Corymbia citriodora	14	48x35	C-	Cod	2long	Sparse	Okay	
2138	Corymbia citriodora	17	50x35	B	Cod	1s2long	Okay	Okay	
2139	Schinus molle	3.5, 3.4	16x16	B	Cod	Inc.	Okay	No RF	
2140	Corymbia citriodora	18	55x35	C	Cod	2long	Okay	Okay	
2141	Corymbia citriodora	7, 3	22x23	C	Bowed	Brk 1s	Sparse	stump sprts	
2142	Corymbia citriodora	19	55x35	C	Cod	2long	Sparse	Okay	
2143	Melaleuca quinquenervia	11	24x10	C	Okay	Okay	Db sparse	Okay	
2144	Melaleuca quinquenervia	10, 7, 3	26x12	F	Cod	Inc.	Bare	No RF	
2145	Melaleuca quinquenervia	10, 11, 12	26x12	D	Cod	Inc.	Db sparse	Circ	
2146	Melaleuca quinquenervia	10, 12	26x12	D	Cod	Inc.	Db sparse	No RF	
2147	Corymbia citriodora	18	50x40	C	Cod	1s 2long	Okay	Okay	
2148	Fraxinus uhdei	9	24x14	C	Cod	Inc.	Sparse	1s	By channel
2149	Eucalyptus sideroxylon	6.5	15x9	D	Cod	Inc.	Db sparse	Okay	
2150	Fraxinus uhdei	9	25x10	D	Cod	Inc.	Bare	1s	By channel
2151	Corymbia citriodora	18	45x40	C-	Cod	1s	Chlorotic	Okay	
2152	Corymbia citriodora	28	40x35	C	Cod	1s 2long	Chlorotic	Okay	
2153	Eucalyptus camaldulensis	34	55x35	B	Cod	Inc.	Okay	Okay	
2154	Eucalyptus sideroxylon	6x4	20x20	D	Stump sprts	Okay	Sparse	Okay	
2155	Eucalyptus sideroxylon	4x4	20x15	D	Stump sprts	Okay	Sparse	Okay	
2156	Corymbia citriodora	7	30x15	D-	Db	Db	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2157	Corymbia citriodora	34	55x40	B	Cod	2long	Okay	Okay	
2158	Corymbia citriodora	16	45x25	C-	Cod	1s brk	Sparse	Okay	
2159	Corymbia citriodora	20	50x32	B	Cod	Okay	Okay	Okay	
2160	Corymbia citriodora	42	55x45	B	Cod	2long inc	Okay	Okay	
2161	Corymbia citriodora	18	45x30	B	Cod	DL 2long	Okay	Okay	
2162	Corymbia citriodora	21	45x30	B	Cod	DL 1s	Okay	Okay	
2163	Corymbia citriodora	16	40x22	C	Cod	Brk 1s	Sparse	Okay	
2164	Fraxinus uhdei	8"b	20x12	D	Stump sprts	Epi	Sparse	Covered	
2165	Fraxinus uhdei	4, 4	10x12	C-	Cod	Inc.	Sparse	No RF	
2166	Fraxinus uhdei	10	24x14	C-	Cod	Okay	Sparse	Okay	
2167	Pinus halepensis	28	48x32	B	Bowed	Okay	Okay	Okay	
2168	Pinus halepensis	24	48x30	C	Okay	Okay	Okay	Circ	
2169	Fraxinus uhdei	11" b	24x20	B	Cod	Cr inc	Okay	1s	By east wall
2170	Fraxinus uhdei	7.5	24x16	B	Cod	Cr	Okay	1s	By east wall
2171	Fraxinus uhdei	8	26x18	B	Cod	Cr inc	Okay	1s	By east wall
2172	Fraxinus uhdei	8	26x14	B	Cod	Cr inc	Okay	1s	By east wall
2173	Pinus halepensis	30	32x35	C	Cod, 45° lean	DL Lt	Okay	1sRF	
2174	Cupaniopsis anacardioides	13	26x30	B	TO DL	Epi	Okay	M blight	
2175	Cupaniopsis anacardioides	15	24x24	C	Cod FC	Cr inc	Okay	Shallow	
2176	Cupaniopsis anacardioides	7	20x20	C-	Cod	FC	Sparse	Circ	
2177	Cupaniopsis anacardioides	11	24x24	B	Cod	Inc.	Okay	Okay	
2178	Cupaniopsis anacardioides	5, 6	17x17	C	Cod	TO inc	Okay	Okay	
2179	Cupaniopsis anacardioides	14" b	21x24	D	Cod	Inc.	Sparse	Shallow	
2180	Cupaniopsis anacardioides	11" b	22x25	D	Cod	Inc.	Sparse	Shallow	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2181	Cupaniopsis anacardioides	4, 6	16x20	D	Cod	Inc.	Sparse	Shallow	
2182	Cupaniopsis anacardioides	11	18x20	D	Cod	Inc.	Sparse	Okay	
2183	Pinus halepensis	32	45x45	B	Cod	DL 2long	Okay	Okay	
2184	Pinus halepensis	28	50x45	B	OL	2long	Okay	Okay	
2185	Pinus halepensis	31	48x45	C	Okay	Lt 2long	Sparse	Shallow	
2186	Pinus canariensis	22	60x40	A	Okay	Okay	Okay	Okay	
2187	Pinus halepensis	14	30x26	C	OL, 60° lean	2long	Okay	Okay	
2188	Pinus canariensis	18	50x30	B	Okay	Okay	Okay	Okay	
2189	Pinus halepensis	19	40x36	B	Cod OL	2long	Okay	Circ	
2190	Magnolia g. Majestic Bty	13" b	30x40	B	Cod FC	Epi 2long	Okay	Shallow	Low branching
2191	Magnolia g. Majestic Bty	10" b	26x22	C	Cod	Lt epi	Sparse	Shallow	Low branching
2192	Magnolia g. Majestic Bty	11" b	26x24	C	Cod	Lt epi	Sparse	Shallow	Low branching
2193	Magnolia g. Majestic Bty	13" b	26x24	C-	Cod	Lt epi	Db sparse	Shallow	Low branching
2194	Magnolia g. Majestic Bty	10	26x24	C-	Cod	Lt epi	Db sparse	Okay	
2195	Magnolia g. Majestic Bty	8" b	23x20	C-	Cod	TD	Db sparse	1sRF	Low branching
2196	Magnolia g. Majestic Bty	14" b	28x30	B	Cod	Epi inc	Okay	1sRF	Low branching
2197	Magnolia g. Majestic Bty	11	27x24	D	Cod	Lt epi	Db sparse	stump sprts	Low branching
2198	Magnolia g. Majestic Bty	12	28x30	B	Cod	Lt epi	Okay	Shallow	Low branching
2199	Magnolia g. Majestic Bty	14" b	28x32	B	Cod	Lt epi	Okay	Okay	Low branching
2200	Ficus r. Australis	15,15,15,10,9	34x36	B	Cod lean	FC 1s	Okay	Shallow	
2201	Magnolia g. Majestic Bty	10	30x18	C	Binj	Epi 1s	Okay	No RF	Suppressed
2202	Magnolia g. Majestic Bty	5	25x6	D	o	Db	Sparse	No RF	
2203	Magnolia g. Majestic Bty	9	30x22	D	Cod	Db epi	Sparse	Shallow	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2204	Magnolia g. Majestic Bty	6	32x18	D	Cod	Epi	Sparse	Shallow	
2205	Melaleuca quinquenervia	13, 9	34x20	C	Cod OL	Inc.	Okay	No RF	
2206	Melaleuca quinquenervia	8, 9	30x15	B	Cod	Inc.	Okay	No RF	
2207	Melaleuca quinquenervia	14	22x20	B	Cod	DL	Okay	No RF	
2208	Magnolia g. Majestic Bty	8	34x24	C	Okay	Epi 1s	Okay	No RF	
2209	Magnolia g. Majestic Bty	10	34x24	B	Okay	Epi 1s	Okay	Shallow	
2210	Magnolia g. Majestic Bty	10	35x26	B	Cod	Epi	Okay	Okay	
2211	Magnolia g. Majestic Bty	14" b	36x30	C	Cod	Lt epi	Sparse	Okay	
2212	Melaleuca quinquenervia	11, 10, 7	34x24	C	Cod	Inc.	Okay	No RF	
2213	Melaleuca quinquenervia	11, 10, 7	35x26	C	Cod	Inc.	Okay	No RF	
2214	Melaleuca quinquenervia	12, 5, 5	34x24	C-	Cod	Inc.	Sparse	Shallow	
2215	Pinus halepensis	12	28x15	D	Cod	Inc.	Sparse	No RF	
2216	Pinus halepensis	20	45x38	B	Okay	1s inc	Okay	Okay	Crowds 2215
2217	Melaleuca quinquenervia	13, 13, 9	38x32	C-	Cod	2long	Pale	Covered	
2218	Corymbia citriodora	14	48x45	D	Cod	Inc.	Chlor sparse	Okay	
2219	Corymbia citriodora	12	47x42	D	Cod DL	2long	Chlor sparse	Okay	
2220	Pinus halepensis	25	45x40	B	Cod lean	DL	Okay	Covered	
2221	Corymbia citriodora	19	50x36	C-	Cod	inc	Sparse	Okay	
2222	Corymbia citriodora	18	50x40	C	Cod	1s 2long	Sparse	Okay	
2223	Corymbia citriodora	15	50x30	C	Okay	1s 2long	Okay	Okay	
2224	Corymbia citriodora	27	55x45	C	Cod inj	2long	Okay	Okay	Dominant
2225	Corymbia citriodora	21	52x30	C	Cod	DL 2long	Okay	Okay	
2226	Corymbia citriodora	18	52x40	D	Okay	2long	Sparse	Okay	
2227	Corymbia citriodora	16	57x36	C-	Bowed DL	1s 2long	Sparse	Okay	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2228	Corymbia citriodora	9	50x18	C	Cod top	Db	Okay	Okay	
2229	Pinus halepensis	17" b	36x60	B	Cod	1s inc	Okay	Girdled	
2230	Pinus halepensis	13	36x18	C	60º lean	1s Cr	lower sparse	1sRF	
2231	Pinus halepensis	16	35x25	C	60º lean	1s Cr	lower sparse	Okay	
2232	Corymbia citriodora	15	30x30	C	Bowed	1s 2long	Sparse	Okay	2233 Crowds it
2233	Corymbia citriodora	11	40x35	C	DL	1s 2long	Sparse	Okay	2234 Crowds it
2234	Corymbia citriodora	14	45x37	C	Cod	1s DL 2long	Sparse	Okay	2235 Crowds it
2235	Corymbia citriodora	24	50x40	B	Cod	2long	Okay	Okay	
2236	Corymbia citriodora	22	50x40	B	Cod	Inc. 2long	Okay	Okay	Long seam in trunk
2237	Pinus halepensis	24	40x38	B	Cod	Cr 2long	Okay	Okay	
2238	Pinus halepensis	16	40x35	C	Bowed	1s 2long	Sparse	Okay	
2239	Pinus halepensis	7	22x24	D	Bowed DL	OL 1s	Sparse	1sRF	30º lean
2240	Pinus halepensis	20	7x45	F	Fallen	2long	Brown	Failed	Was girdled
2241	Pinus halepensis	21	30x35	C	Cod	Brk sags	Okay	1sRF	hit by 2240
2242	Melaleuca quinquenervia	13, 9, 7	35x22	F	Cod	Inc.	Brown	No RF	Standing dead
2243	Melaleuca quinquenervia	9, 9, 9, 9	35x22	D-	Cod	Inc.	near dead	No RF	
2244	Melaleuca quinquenervia	12, 9, 6	33x22	D-	Cod	Inc.	Chlor sparse	Shallow	
2245	Melaleuca quinquenervia	12, 15, 8	35x28	C-	Cod	Inc.	Chlor sparse	Shallow	
2246	Pyrus c. Bradford	17	28x18	C	Cod inj	Hd epi	Okay	4' sq. co	Street tree lifts sidewalk
2247	Pyrus c. Bradford	21	28x18	C	TO cod	Hd epi inc	Okay	Cr epi	Street tree lifts sidewalk
2248	Pyrus c. Bradford	14	22x17	F	Dead	Hd	Brown	No RF	Street tree minor lift
2249	Pyrus c. Bradford	22	22x18	C	Cod	Cr inc	Okay	1sRF	Street tree lifts sidewalk

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2250	Pyrus c. Bradford	21	22x20	C	Cod	Cr inc	Okay	Girdled	Street tree lifts SW
2251	Pyrus c. Bradford	20	22x20	C	Cod lean	Cr inc	Okay	Girdled	Street tree lifts sidewalk
2252	Pyrus calleryana	5ea x 3"	14x12	D	Stump sprts	Cr inc	Bare	Okay	Street tree
2253	Pyrus c. Bradford	22	22x20	B	Cod lean	Inc.	Okay	epi	Street tree lifts sidewalk
2254	Fraxinus uhdei	18"b	20x20	C	Epi stump sprts	Xing Cr	Okay	Crowded	Weed by channel
2255	Ficus m. Nitida	18"b	24x24	C	Epi stump sprts	Xing Cr	Okay	Crowded	weed by channel, in fence
2256	Jacaranda mimosifolia	8, 9	22x24	C	Cod	DL	Db sparse	Crowded	weed by channel, in fence
2257	Pinus canariensis	18	18x28	B	Wires top'd	Cr epi	Okay	Crowded	Street tree lifts sidewalk
2258	Ulmus parvifolia	14" b	20x20	C	Stump sprts	Cr	Okay	Okay	Bush
2259	Pyrus kawakamii	11	20x20	C	Cod	Okay	Sparse	Epi	
2260	Pyrus kawakamii	12	22x20	C	Cod	DL inc	Sparse	Okay	
2261	Pinus canariensis	17	22x20	B	Top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2262	Pyrus kawakamii	14	20x20	C	Cod	Hd DL	Sparse	Okay	
2263	Pinus canariensis	22	24x20	B	Top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2264	Cedrus deodara	26	42x24	C	Cod	2long	Sparse	Okay	
2265	Pinus canariensis	17	26x24	B	Top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2266	Jacaranda mimosifolia	13	23x22	B	Cod lean	Inc.	Okay	1sRF	
2267	Jacaranda mimosifolia	20	32x36	B	Cod	Xing Hd inc	Okay	Shallow	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2268	Cedrus deodara	18	45x34	C	Bowed	Okay	Sparse	1sRF	
2269	Cedrus deodara	15	35x30	C	Bowed top'd	Okay	Sparse	Girdled	
2270	Jacaranda mimosifolia	17	32x28	B	Okay	Hd epi	Okay	Circ	
2271	Jacaranda mimosifolia	8	18x14	C	Bowed	1s epi	Okay	No RF	Suppressed and crowded by 2270
2272	Jacaranda mimosifolia	16	34x28	B	Cod	Hd Xing	Okay	Okay	
2273	Jacaranda mimosifolia	12	30x26	B	Bowed	1s Hd	Okay	1sRF	
2274	Cedrus deodara	17	45x34	C	Cod	DL	Sparse	Okay	
2275	Cedrus deodara	13	45x20	C	Okay	Okay	Sparse	Okay	
2276	Cedrus deodara	22	47x40	B	Cod	Xing	Okay	Okay	
2277	Jacaranda mimosifolia	10	224x20	B	Okay	Hd Cr	Okay	1sRF	
2278	Jacaranda mimosifolia	16	28x25	B	Okay	Hd	Okay	Okay	
2279	Jacaranda mimosifolia	9	25x20	C	Bowed DL	Hd	Okay	No RF	
2280	Cedrus deodara	24	48x40	B	Cod top'd	Xing	Okay	Okay	
2281	Cedrus deodara	22	42x38	B	Okay	2long	Okay	1sRF	
2282	Jacaranda mimosifolia	18	35x35	B	Cod	Hd epi	Okay	Shallow	Lifts sidewalk
2283	Cedrus deodara	20	45x40	B	Sweep	Okay	Okay	1sRF	
2284	Jacaranda mimosifolia	20	32x34	B	Cod	Hd DL	Okay	Shallow	
2285	Cedrus deodara	15	45x25	B	Cod	Okay	Okay	Okay	
2286	Cedrus deodara	23	45x35	B	Cod DL	Dk inj	Okay	Okay	
2287	Jacaranda mimosifolia	14	25x25	B	Cod	Hd epi	Okay	1sRF	
2288	Jacaranda mimosifolia	17	30x30	B	Cod	Hd DL epi	Okay	Okay	
2289	Cedrus deodara	16" b	45x35	C	Cod FC	Okay	Sparse	Okay	
2290	Jacaranda mimosifolia	13	35x28	C-	lean	Hd 1s	Sparse	1sRF	

Tree #	Species	DBH	Height x Width	Health	Trunk condition	Limb condition	Foliage condition	Root condition	Comments
2291	Cedrus deodara	26" b	50x35	B	Cod	Okay	Okay	Covered	
2292	Jacaranda mimosifolia	8	30x26	C	Epi leans	Hd epi	Sparse	Inj shallow	
2293	Jacaranda mimosifolia	18	30x30	C	Epi leans	Hd epi	Okay	Sprung	
2294	Cedrus deodara	22	45x36	B	Okay	Okay	Okay	Okay	
2295	Pyrus kawakamii	14	28x24	C	Cod inj	Hd inj	Sparse	inj	Recent grading
2296	Cedrus deodara	21	45x30	B	Inj	Brks 1s inj	Okay	Fill over	Recent grading
2297	Cedrus deodara	18	45x34	C	Okay	Okay	Sparse	Okay	
2298	Jacaranda mimosifolia	13	30x25	B	cod	Brks epi	Okay	Fill over	Recent grading
2299	Cedrus deodara	9	24x18	C	Top'd DL	DL 1s	Okay	Fill over	Recent grading
2300	Jacaranda mimosifolia	10	24x18	C	Cod inj	DL inj inc	Okay	Fill over	Recent grading
2301	Pinus canariensis	14	32x30	B	Wires top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2302	Pinus canariensis	18	30x30	B	Wires top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2303	Pinus canariensis	16	30x20	B	Wires top'd	FC 2long	Okay	Crowded	Street tree, imbedded tree well collar
2304	Pinus canariensis	16	28x20	C	Wires top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2305	Pinus canariensis	18	30x28	B	Wires top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2306	Pinus canariensis	17	30x26	B	Wires top'd	2long	Okay	Crowded	Street tree, imbedded tree well collar
2307	Pyrus kawakamii	14	24x26	C	Cod inj	Hd DL epi	Sparse	inj	
2308	Pyrus kawakamii	16	24x28	B	Cod inj	Hd DL epi	Okay	inj	Recent grading
2309	Cedrus deodara	18	45x36	B	Okay	2long	Okay	Okay	Recent grading
2310	Jacaranda mimosifolia	9	24x20	B	Epi inj	Epi inj	Okay	Fill over	Recent grading

**DBH – Diameter at Breast Height, i.e. 4.5 feet above grade. "b" indicates a more basal measurement due to low branching.*

Recommendations

General Recommendations

Where possible, preservation and protection in place is the best option. If there is a special need for certain large specimen trees in the new landscape, 62 trees could reasonably be transplanted, but it probably would not be reasonable to transplant all 62 or even most of these. One hundred and one trees are recommended for removal regardless of the new design. The bulk of trees along the west edge, outside the channel, along Winnetka, should remain in place with corrective pruning and root zone enhancement. The City street trees should only be removed as directed and permitted by the City Urban Forestry Department. All other trees to remain should be fenced off, protected, and maintained and during demolition, grading and construction.

Matrix of Recommendations

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2001	Pinus halepensis	3.6	14x8	B	NA	No	Yes
2002	Pinus halepensis	25	50x30	C	25’	No	If needed
2003	Pinus halepensis	27	50x30	C	27’	No	If needed
2004	Pinus halepensis	28	50x40	B	21’	No	If needed
2005	Pinus canariensis	18	55x30	C	18’	No	If needed
2006	Pinus halepensis	27	50x40	B	27’	If needed	If needed
2007	Cupaniopsis anacardioides	9	18x20	C	NA	No	Yes

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2008	Cupaniopsis anacardioides	4.5	15x15	D	NA	No	Yes
2009	Cupaniopsis anacardioides	8	15x18	C	NA	No	Yes
2010	Cupaniopsis anacardioides	10	16x20	C	NA	No	Yes
2011	Cupaniopsis anacardioides	10	18x18	D	NA	No	Yes
2012	Cupaniopsis anacardioides	11	18x18	D	NA	No	Yes
2013	Pinus halepensis	31	45x45	B	31’	No	If needed
2014	Pinus halepensis	36	50x45	B	36’	No	If needed
2015	Brachychiton populneus	12	20x18	B	12’	If needed	If needed
2016	Brachychiton populneus	6	15x15	C	6’	No	If needed
2017	Brachychiton populneus	14	18x18	B	14’	If needed	If needed
2018	Brachychiton populneus	13	20x18	C	13’	No	If needed
2019	Brachychiton populneus	10	18x16	C	10’	No	If needed
2020	Brachychiton populneus	17	22x20	B	17’	If needed	If needed
2021	Cupaniopsis anacardioides	11	20x22	C	NA	No	Yes
2022	Cupaniopsis anacardioides	9.5	18x18	D	NA	No	Yes
2023	Cupaniopsis anacardioides	15	20x22	C	NA	No	Yes
2024	Cupaniopsis anacardioides	10	15x10	D-	NA	No	Yes
2025	Cupaniopsis anacardioides	11	18x20	C	NA	No	Yes
2026	Cupaniopsis anacardioides	11	20x20	D	NA	No	Yes
2027	Cupaniopsis anacardioides	12	18x22	D	NA	No	Yes
2028	Cupaniopsis anacardioides	11	18x22	D	NA	No	Yes
2029	Cupaniopsis anacardioides	11	18x16	D	NA	No	Yes
2030	Cupaniopsis anacardioides	10	18x20	C	NA	No	Yes
2031	Cupaniopsis anacardioides	4	14x12	D	NA	No	Yes
2032	Brachychiton populneus	10	12x14	C	10’	No	If needed
2033	Brachychiton populneus	23	38x24	B	23’	If needed	If needed
2034	Fraxinus uhdei	4, 3, 5, 5	24x16	D	NA	No	Yes
2035	Brachychiton populneus	16	23x16	C	16’	No	If needed
2036	Brachychiton populneus	17	22x18	B	17’	If needed	If needed

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2037	Cupaniopsis anacardioides	10x2	12x10	B	NA	No	Yes
2038	Cupaniopsis anacardioides	8	20x18	C	8’	No	Yes
2039	Cupaniopsis anacardioides	10	17x20	C	10’	No	Yes
2040	Cupaniopsis anacardioides	8	14x18	C	8’	No	Yes
2041	Cupaniopsis anacardioides	9	14x18	B	9’	If needed	If needed
2042	Pinus halepensis	25	55x28	C-	NA	No	Yes
2043	Cinnamomum camphora	5	12x12	D	NA	No	Yes
2044	Brachychiton populneus	13	22x20	C	13’	No	If needed
2045	Brachychiton populneus	14	25x18	C-	NA	No	Yes
2046	Brachychiton populneus	15	30x20	C	15’	No	if needed
2047	Brachychiton populneus	12	28x20	C	12’	No	if needed
2048	Brachychiton populneus	13	30x20	C	13’	No	if needed
2049	Brachychiton populneus	17	25x25	B	17’	If needed	if needed
2050	Brachychiton populneus	15	23x25	B	15’	If needed	if needed
2051	Brachychiton populneus	12	22x25	C	12’	No	if needed
2052	Brachychiton populneus	13	20x22	B	13’	If needed	if needed
2053	Brachychiton populneus	14	20x22	B	14’	If needed	if needed
2054	Brachychiton populneus	17	20x26	B	17’	If needed	if needed
2055	Brachychiton populneus	16	26x28	B	16’	If needed	if needed
2056	Brachychiton populneus	14	20x24	B	14’	If needed	if needed
2057	Brachychiton populneus	15	22x26	C	15’	No	if needed
2058	Brachychiton populneus	18	26x26	C	18’	No	if needed
2059	Brachychiton populneus	16	24x26	C	16’	No	if needed
2060	Brachychiton populneus	9	20x18	C	9’	No	if needed
2061	Fraxinus uhdei	6	22x18	C	NA	No	Yes
2062	Brachychiton populneus	19	24x24	C	19’	No	If needed
2063	Fraxinus uhdei	4, 4	24x10	C	NA	No	Yes
2064	Corymbia citriodora	9	27x12	B	9’	No	if needed
2065	Corymbia citriodora	9, 5	28x18	B	12’	No	If needed

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2066	Pinus halepensis	17 b	30x22	C	16’	No	If needed
2067	Brachychiton populneus	13	20x12	B	13’	If needed	If needed
2068	Brachychiton populneus	7	18x18	B	7’	If needed	If needed
2069	Brachychiton populneus	8	17x16	B	8’	If needed	If needed
2070	Corymbia citriodora	9	32x24	C	9’	No	If needed
2071	Pinus halepensis	22	45x40	C	22’	No	If needed
2072	Pinus halepensis	20	50x30	C	20’	No	If needed
2073	Pinus halepensis	21	50x30	B	21’	No	If needed
2074	Pinus halepensis	20	50x30	C	20’	No	If needed
2075	Pinus halepensis	17	45x25	C	17’	No	If needed
2076	Pinus halepensis	16	50x20	C	16’	No	If needed
2077	Corymbia citriodora	19	45x30	C	19’	No	If needed
2078	Fraxinus uhdei	5.5	20x10	C-	NA	No	Yes
2079	Fraxinus uhdei	4.5, 2.5	20x10	C-	NA	No	Yes
2080	Corymbia citriodora	23	50x40	C	23’	No	If needed
2081	Corymbia citriodora	12	45x25	C-	NA	No	Yes
2082	Pinus halepensis	10	35x18	B	8’	No	Yes
2083	Fraxinus uhdei	6	22x10	C-	NA	No	Yes
2084	Corymbia citriodora	18	35x30	D	NA	No	Yes
2085	Corymbia citriodora	19	50x30	C-	NA	No	Yes
2086	Melaleuca quinquenervia	10, 10, 10	30x20	C-	NA	No	Yes
2087	Melaleuca quinquenervia	9, 9, 10	30x18	D-	NA	No	Yes
2088	Melaleuca quinquenervia	9	30x15	C	10’	No	If needed
2089	Corymbia citriodora	10	40x20	C	10’	No	If needed
2090	Corymbia citriodora	16	45x22	C	16’	No	If needed
2091	Corymbia citriodora	16	45x30	B	16’	No	If needed
2092	Corymbia citriodora	17	50x35	C	17’	No	If needed
2093	Corymbia citriodora	8	40x22	D	NA	No	Yes
2094	Corymbia citriodora	12	35x35	D	NA	No	Yes

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2095	Corymbia citriodora	16	50x30	B	16’	No	If needed
2096	Corymbia citriodora	10	40x20	D	NA	No	Yes
2097	Pinus halepensis	22	50x40	C	22’	No	if needed
2098	Pinus halepensis	22	50x30	C	22’	No	if needed
2099	Pinus halepensis	20	50x30	F	NA	No	Yes
2100	Pinus halepensis	18	50x30	C-	NA	No	Yes
2101	Corymbia citriodora	13	45x22	C-	NA	No	Yes
2102	Corymbia citriodora	12	45x28	C	12’	No	if needed
2103	Corymbia citriodora	11	45x20	D	NA	No	Yes
2104	Corymbia citriodora	13	45x30	C	13’	No	if needed
2105	Corymbia citriodora	12	45x30	C	12’	No	if needed
2106	Cupaniopsis anacardioides	9	18 x 22	D	NA	No	Yes
2107	Pinus halepensis	14	30x30	C	14’	No	if needed
2108	Pinus halepensis	22	50x34	C	22’	No	if needed
2109	Pinus halepensis	18	50x30	C	18’	No	if needed
2110	Pinus halepensis	8	22x16	B	7’	No	if needed
2111	Corymbia citriodora	26	50x40	C	26’	No	If needed
2112	Corymbia citriodora	20	50x30	C	20’	No	If needed
2113	Corymbia citriodora	12	40x25	C-	NA	No	Yes
2114	Corymbia citriodora	18	35x35	D	NA	No	Yes
2115	Corymbia citriodora	22	50x40	C	22’	No	If needed
2116	Pinus halepensis	22	50x30	B	22’	If needed	If needed
2117	Pinus halepensis	18	45x35	B	18’	If needed	If needed
2118	Pinus halepensis	26	50x40	B	26’	If needed	If needed
2119	Cupaniopsis anacardioides	10	18x20	D	NA	No	Yes
2120	Cupaniopsis anacardioides	10	18x22	D	NA	No	Yes
2121	Pinus halepensis	18" b	45x25	C	17’	No	If needed
2122	Corymbia citriodora	10	38x22	C	10’	No	If needed
2123	Corymbia citriodora	11	40x30	C	11’	No	If needed

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2124	Corymbia citriodora	12	40x30	C	12’	No	If needed
2125	Pinus halepensis	17	45x35	B	17’	No	If needed
2126	Pinus halepensis	17	45x30	C	17’	No	If needed
2127	Pinus halepensis	18	45x35	C	18’	No	If needed
2128	Pinus halepensis	20	45x30	C	20’	No	If needed
2129	Pinus halepensis	20	45x30	B	20’	No	If needed
2130	Corymbia citriodora	14	45x25	C-	NA	No	Yes
2131	Corymbia citriodora	7	30x13	D	NA	No	Yes
2132	Corymbia citriodora	19	40x35	C	19’	No	If needed
2133	Corymbia citriodora	17	40x35	C	17’	No	If needed
2134	Corymbia citriodora	14	45x35	C-	NA	No	Yes
2135	Corymbia citriodora	20	50x30	B	20’	No	If needed
2136	Corymbia citriodora	16	42x30	C	16’	No	If needed
2137	Corymbia citriodora	14	48x35	C-	NA	No	Yes
2138	Corymbia citriodora	17	50x35	B	17’	No	If needed
2139	Schinus molle	3.5, 3.4	16x16	B	8’	If needed	If needed
2140	Corymbia citriodora	18	55x35	C	18’	No	If needed
2141	Corymbia citriodora	7, 3	22x23	C	9’	No	If needed
2142	Corymbia citriodora	19	55x35	C	19’	No	If needed
2143	Melaleuca quinquenervia	11	24x10	C	12’	No	If needed
2144	Melaleuca quinquenervia	10, 7, 3	26x12	F	NA	No	Yes
2145	Melaleuca quinquenervia	10, 11, 12	26x12	D	NA	No	Yes
2146	Melaleuca quinquenervia	10, 12	26x12	D	NA	No	Yes
2147	Corymbia citriodora	18	50x40	C	18’	No	if needed
2148	Fraxinus uhdei	9	24x14	C	NA	No	Yes
2149	Eucalyptus sideroxylon	6.5	15x9	D	NA	No	Yes
2150	Fraxinus uhdei	9	25x10	D	NA	No	Yes
2151	Corymbia citriodora	18	45x40	C-	NA	No	Yes
2152	Corymbia citriodora	28	40x35	C	28’	No	if needed

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2153	Eucalyptus camaldulensis	34	55x35	B	34’	No	if needed
2154	Eucalyptus sideroxylon	6x4	20x20	D	NA	No	Yes
2155	Eucalyptus sideroxylon	4x4	20x15	D	NA	No	Yes
2156	Corymbia citriodora	7	30x15	D-	NA	No	Yes
2157	Corymbia citriodora	34	55x40	B	34’	No	if needed
2158	Corymbia citriodora	16	45x25	C-	NA	No	Yes
2159	Corymbia citriodora	20	50x32	B	20’	No	if needed
2160	Corymbia citriodora	42	55x45	B	42’	No	if needed
2161	Corymbia citriodora	18	45x30	B	18’	No	If needed
2162	Corymbia citriodora	21	45x30	B	21’	No	If needed
2163	Corymbia citriodora	16	40x22	C	16’	No	If needed
2164	Fraxinus uhdei	8"b	20x12	D	NA	No	Yes
2165	Fraxinus uhdei	4, 4	10x12	C-	NA	No	Yes
2166	Fraxinus uhdei	10	24x14	C-	NA	No	Yes
2167	Pinus halepensis	28	48x32	B	28’	No	If needed
2168	Pinus halepensis	24	48x30	C	24’	No	If needed
2169	Fraxinus uhdei	11" b	24x20	B	NA	No	Yes
2170	Fraxinus uhdei	7.5	24x16	B	NA	No	Yes
2171	Fraxinus uhdei	8	26x18	B	NA	No	Yes
2172	Fraxinus uhdei	8	26x14	B	NA	No	Yes
2173	Pinus halepensis	30	32x35	C	30’	No	If needed
2174	Cupaniopsis anacardioides	13	26x30	B	13’	If needed	If needed
2175	Cupaniopsis anacardioides	15	24x24	C	15’	No	If needed
2176	Cupaniopsis anacardioides	7	20x20	C-	NA	No	Yes
2177	Cupaniopsis anacardioides	11	24x24	B	11’	If needed	If needed
2178	Cupaniopsis anacardioides	5, 6	17x17	C	8’	No	If needed
2179	Cupaniopsis anacardioides	14" b	21x24	D	NA	No	Yes
2180	Cupaniopsis anacardioides	11" b	22x25	D	NA	No	Yes
2181	Cupaniopsis anacardioides	4, 6	16x20	D	NA	No	Yes

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2182	Cupaniopsis anacardioides	11	18x20	D	NA	No	Yes
2183	Pinus halepensis	32	45x45	B	32’	If needed	If needed
2184	Pinus halepensis	28	50x45	B	28’	If needed	If needed
2185	Pinus halepensis	31	48x45	C	31’	No	If needed
2186	Pinus canariensis	22	60x40	A	22’	Yes	If needed
2187	Pinus halepensis	14	30x26	C	14’	No	If needed
2188	Pinus canariensis	18	50x30	B	18’	If needed	If needed
2189	Pinus halepensis	19	40x36	B	19’	If needed	If needed
2190	Magnolia g. Majestic Bty	13" b	30x40	B	13’	No	If needed
2191	Magnolia g. Majestic Bty	10" b	26x22	C	10’	No	If needed
2192	Magnolia g. Majestic Bty	11" b	26x24	C	11’	No	If needed
2193	Magnolia g. Majestic Bty	13" b	26x24	C-	NA	No	If needed
2194	Magnolia g. Majestic Bty	10	26x24	C-	NA	No	If needed
2195	Magnolia g. Majestic Bty	8" b	23x20	C-	NA	No	If needed
2196	Magnolia g. Majestic Bty	14" b	28x30	B	14’	No	If needed
2197	Magnolia g. Majestic Bty	11	27x24	D	NA	No	If needed
2198	Magnolia g. Majestic Bty	12	28x30	B	13’	No	If needed
2199	Magnolia g. Majestic Bty	14" b	28x32	B	14’	No	If needed
2200	Ficus r. Australis	15,15,15,10,9	34x36	B	20’	No	If needed
2201	Magnolia g. Majestic Bty	10	30x18	C	11’	No	If needed
2202	Magnolia g. Majestic Bty	5	25x6	D	NA	No	Yes
2203	Magnolia g. Majestic Bty	9	30x22	D	NA	No	Yes
2204	Magnolia g. Majestic Bty	6	32x18	D	NA	No	Yes
2205	Melaleuca quinquenervia	13, 9	34x20	C	15’	No	if needed
2206	Melaleuca quinquenervia	8, 9	30x15	B	12’	No	if needed
2207	Melaleuca quinquenervia	14	22x20	B	15’	No	if needed
2208	Magnolia g. Majestic Bty	8	34x24	C	9’	No	If needed
2209	Magnolia g. Majestic Bty	10	34x24	B	11’	No	If needed
2210	Magnolia g. Majestic Bty	10	35x26	B	11’	No	If needed

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2211	Magnolia g. Majestic Bty	14" b	36x30	C	14’	No	If needed
2212	Melaleuca quinquenervia	11, 10, 7	34x24	C	16’	No	If needed
2213	Melaleuca quinquenervia	11, 10, 7	35x26	C	16’	No	If needed
2214	Melaleuca quinquenervia	12, 5, 5	34x24	C-	NA	No	Yes
2215	Pinus halepensis	12	28x15	D	NA	No	Yes
2216	Pinus halepensis	20	45x38	B	20’	No	If needed
2217	Melaleuca quinquenervia	13, 13, 9	38x32	C-	NA	No	Yes
2218	Corymbia citriodora	14	48x45	D	NA	No	Yes
2219	Corymbia citriodora	12	47x42	D	NA	No	Yes
2220	Pinus halepensis	25	45x40	B	25’	If needed	If needed
2221	Corymbia citriodora	19	50x36	C-	NA	No	Yes
2222	Corymbia citriodora	18	50x40	C	18’	No	If needed
2223	Corymbia citriodora	15	50x30	C	15’	No	If needed
2224	Corymbia citriodora	27	55x45	C	27’	No	If needed
2225	Corymbia citriodora	21	52x30	C	21’	No	If needed
2226	Corymbia citriodora	18	52x40	D	NA	No	Yes
2227	Corymbia citriodora	16	57x36	C-	NA	No	Yes
2228	Corymbia citriodora	9	50x18	C	9’	No	If needed
2229	Pinus halepensis	17" b	36x60	B	16’	No	If needed
2230	Pinus halepensis	13	36x18	C	13’	No	Yes
2231	Pinus halepensis	16	35x25	C	16’	No	Yes
2232	Corymbia citriodora	15	30x30	C	15’	No	If needed
2233	Corymbia citriodora	11	40x35	C	11’	No	If needed
2234	Corymbia citriodora	14	45x37	C	14’	No	If needed
2235	Corymbia citriodora	24	50x40	B	24’	No	If needed
2236	Corymbia citriodora	22	50x40	B	22’	No	Yes
2237	Pinus halepensis	24	40x38	B	24’	If needed	If needed
2238	Pinus halepensis	16	40x35	C	16’	No	If needed
2239	Pinus halepensis	7	22x24	D	NA	No	Yes

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2240	Pinus halepensis	20	7x45	F	NA	No	Yes
2241	Pinus halepensis	21	30x35	C	21’	No	Yes
2242	Melaleuca quinquenervia	13, 9, 7	35x22	F	NA	No	Yes
2243	Melaleuca quinquenervia	9, 9, 9, 9	35x22	D-	NA	No	Yes
2244	Melaleuca quinquenervia	12, 9, 6	33x22	D-	NA	No	Yes
2245	Melaleuca quinquenervia	12, 15, 8	35x28	C-	NA	No	Yes
2246	Pyrus c. Bradford	17	28x18	C	NA	No	Per City direction
2247	Pyrus c. Bradford	21	28x18	C	NA	No	Per City direction
2248	Pyrus c. Bradford	14	22x17	F	NA	No	Per City direction
2249	Pyrus c. Bradford	22	22x18	C	NA	No	Per City direction
2250	Pyrus c. Bradford	21	22x20	C	NA	No	Per City direction
2251	Pyrus c. Bradford	20	22x20	C	NA	No	Per City direction
2252	Pyrus calleryana	5ea x 3"	14x12	D	NA	No	Per City direction
2253	Pyrus c. Bradford	22	22x20	B	NA	No	Per City direction
2254	Fraxinus uhdei	18"b	20x20	C	NA	No	Yes
2255	Ficus m. Nitida	18"b	24x24	C	NA	No	Yes
2256	Jacaranda mimosifolia	8, 9	22x24	C	12’	No	Yes
2257	Pinus canariensis	18	18x28	B	18’	If needed	Per City direction
2258	Ulmus parvifolia	14" b	20x20	C	13’	No	Yes
2259	Pyrus kawakamii	11	20x20	C	11’	No	No
2260	Pyrus kawakamii	12	22x20	C	12’	No	No
2261	Pinus canariensis	17	22x20	B	17’	If needed	Per City direction
2262	Pyrus kawakamii	14	20x20	C	12’	No	No
2263	Pinus canariensis	22	24x20	B	22’	If needed	Per City direction
2264	Cedrus deodara	26	42x24	C	26’	No	No
2265	Pinus canariensis	17	26x24	B	17’	If needed	Per City direction
2266	Jacaranda mimosifolia	13	23x22	B	13’	If needed	No
2267	Jacaranda mimosifolia	20	32x36	B	20’	If needed	No
2268	Cedrus deodara	18	45x34	C	18’	No	No

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2269	Cedrus deodara	15	35x30	C	15’	No	No
2270	Jacaranda mimosifolia	17	32x28	B	17’	If needed	No
2271	Jacaranda mimosifolia	8	18x14	C	8’	No	No
2272	Jacaranda mimosifolia	16	34x28	B	16’	If needed	No
2273	Jacaranda mimosifolia	12	30x26	B	12’	If needed	No
2274	Cedrus deodara	17	45x34	C	17’	No	No
2275	Cedrus deodara	13	45x20	C	13’	No	No
2276	Cedrus deodara	22	47x40	B	22’	If needed	No
2277	Jacaranda mimosifolia	10	224x20	B	10’	If needed	No
2278	Jacaranda mimosifolia	16	28x25	B	16’	If needed	No
2279	Jacaranda mimosifolia	9	25x20	C	9’	No	No
2280	Cedrus deodara	24	48x40	B	24’	If needed	No
2281	Cedrus deodara	22	42x38	B	22’	If needed	No
2282	Jacaranda mimosifolia	18	35x35	B	18’	If needed	Cut root under SW at SW edge
2283	Cedrus deodara	20	45x40	B	20’	If needed	No
2284	Jacaranda mimosifolia	20	32x34	B	20’	If needed	No
2285	Cedrus deodara	15	45x25	B	15’	If needed	No
2286	Cedrus deodara	23	45x35	B	23’	If needed	No
2287	Jacaranda mimosifolia	14	25x25	B	14’	If needed	No
2288	Jacaranda mimosifolia	17	30x30	B	17’	If needed	No
2289	Cedrus deodara	16" b	45x35	C	15’	No	No
2290	Jacaranda mimosifolia	13	35x28	C-	NA	No	No
2291	Cedrus deodara	26" b	50x35	B	25’	If needed	No
2292	Jacaranda mimosifolia	8	30x26	C	8’	No	No
2293	Jacaranda mimosifolia	18	30x30	C	18’	No	No
2294	Cedrus deodara	22	45x36	B	22’	If needed	No
2295	Pyrus kawakamii	14	28x24	C	12’	No	No
2296	Cedrus deodara	21	45x30	B	21’	If needed	No

Tree#	Species	DBH	Height x Width	Health	Clearance radius	Transplant?	Remove?
2297	Cedrus deodara	18	45x34	C	18’	No	No
2298	Jacaranda mimosifolia	13	30x25	B	13’	If needed	No
2299	Cedrus deodara	9	24x18	C	9’	No	No
2300	Jacaranda mimosifolia	10	24x18	C	10’	No	No
2301	Pinus canariensis	14	32x30	B	14’	If needed	Per City direction
2302	Pinus canariensis	18	30x30	B	18’	If needed	Per City direction
2303	Pinus canariensis	16	30x20	B	16’	If needed	Per City direction
2304	Pinus canariensis	16	28x20	C	16’	No	Per City direction
2305	Pinus canariensis	18	30x28	B	18’	If needed	Per City direction
2306	Pinus canariensis	17	30x26	B	17’	If needed	Per City direction
2307	Pyrus kawakamii	14	24x26	C	12’	No	No
2308	Pyrus kawakamii	16	24x28	B	14’	If needed	No
2309	Cedrus deodara	18	45x36	B	18’	If needed	No
2310	Jacaranda mimosifolia	9	24x20	B	9’	If needed	No

Pest and Disease

New pests and diseases arrive and are flaring up more frequently. Previously Canary Island pines were considered pest free, but in the last few years a borer has arrived that infests drought stressed Canary Island pines. The topped pines under the power lines on Winnetka are likely to be stressed both from the small root space and from the topping, and thus more susceptible.

Transplanted trees loose almost 90% of their roots and are essentially in critical care for years after transplanting. During this time every additional stress factor should be minimized. Insects can be a major stress factor. If any trees are transplanted, a regular monitoring program must be put in place to deal with pests promptly as they arise. Even the Canary Island pines, normally quite pest resistant, will be put at risk of borers by transplanting. A good irrigation and monitoring program can reduce this risk, but some chemical pesticides may also be needed.

While few if any trees may be kept in place, except possibly along the edges of the property, those trees that remain should either have the weeds, turf or ground cover plants removed or kept back from the trunks. Mower blight sounds like another

disease, but it is caused by either keeping turf too close to tree trunks or careless mower operation. Many trees also have surface roots that are frequently hit by the lawn mowers. This can be avoided by increasing the diameter of the mulch bed around the tree and driving more carefully. Injured roots occasionally become infected or decayed, and on occasion the decay spreads into the base of the trunk, which can lead to trunk failure and toppling. While construction is under way, the water needs of the trees left in place can be significantly reduced by removing the turf and mulching the soil surface.

When trees are removed, keep enough tree chips on site to mulch the trees that remain in place. A small amount of grass clippings can be mixed with tree chips to speed their composting. Even green fresh tree chips are okay, as long as the tree they came from was not diseased. Mulching is considered here under disease control because it encourages mycorrhizal fungi, which improves tree health and nutrition, plus protects trees from water mold fungi, such as phytophthora. The mulch will also reduce compaction, encourage beneficial soil organisms, such as earthworms, and conserve moisture. Healthy trees are generally less prone to pest and disease.

Caring for Stored Boxed Trees

The trees must be boxed before construction, but usually cannot be replanted until construction is complete or nearly complete. This project is likely to last for more than a year. In the meantime, the trees are confined to boxes and much more likely to dry out. A storage area should be chosen that is as wind protected as possible, yet gets good sunlight. Do not store the trees on top of asphalt due to the extra heat. The storage area should have at least a reliable source of water and it would be helpful to have power for an automatic irrigation controller as well. Battery operated or solar powered irrigation controllers can be used if power is not readily available. While in storage, the trees may need daily irrigation during warm, dry or windy weather. Monitor them closely and set the controller according to their needs. The site should drain well and not be prone to flooding. Research has shown that frequent light irrigation is best during storage and even during the re-establishment period. The pines are tall and more likely to blow over. Guy them well to prevent their toppling and being broken or causing damage.

Decay, Mechanical Injury and Wind Damage

A number of the trees in many species, except palms, have circling, girdling or shallow roots, which increases the likelihood of toppling. Since root defects can cause total tree failure, such trees should not be saved for transplanting. When roots circle in the original nursery container, it may take years before the trunk is constricted by the expansion of the circling roots and its own increasing trunk diameter. Trees with severely girdled roots should be removed.

For shallow rooted trees left in place along the perimeter, vertical mulching may slightly increase the rooting depth and volume, but only by less than 5 percent per application, therefore it should be repeated over several years. Many trees are or were in turf, which leads to shallow rooting. Removal of the turf and replacement with mulch and shrub beds, or regular turf aeration and occasional vertical mulching or radial trenching can help to some degree. However, the best chance for getting well-distributed and deep roots is from new trees, proper soil preparation and adequate root space.

Transplanted trees should not be pruned until normal growth rates are restored. However, a number of the trees that may be left in place need corrective pruning in the next pruning season. Lion-tailing has resulted in excess weight at the end of poorly tapered branches. Heading cuts have produced doglegs and epicormic shoots, which are poorly attached. Flush cuts are likely to lead to decay. Crown restoration pruning can repair some of these issues over time, but low bid pruners will never do an adequate job and probably do not understand the process. Since it may take several pruning cycles, getting the same tree service and crew is useful to continue the planned correction year to year. Since some trees have been over-pruned it will probably be impossible to do a full restoration in one cycle.

The new trees planted after building construction will need training after they become established. A 24" box generally takes about a year to become established so that it is no longer primarily dependent on the roots that came in the box. A 36" box takes about 2 years to become established and a 48" box about 3 years. Few tree services understand training of new trees, good supervision is essential. Skilled pruning will increase the value of MGA's tree inventory and reduce maintenance costs by extending the pruning cycle.

Future pruning should be done by a selected bidder and supervised by an on-site certified arborist. Removal of hazardous limbs, leaders or trees and shortening overly long side branches should be done prior to more ornamental pruning or lacing. Assuming the trees have recovered full normal density, no more than 20 percent foliage removal should take place. Foremen or supervisors should check from below that maximum foliage removal is not exceeded. The health and pruning season will also dictate the amount of pruning that can take place more specifically. Sub-tropical trees and palms should be pruned in summer or late spring. Conifers and deciduous trees should be pruned in November to January.

Planned construction will necessitate the removal or relocation of most trees. The health, structural condition, access and value determine which trees are worthwhile to transplant and reuse.

Soil Improvement

Grading should be carefully done to keep top soil on top. Real topsoil is critical to good growth of a wide variety of species. Subsoils exposed in grading will take about 20 years or more to age, weather and to be something like real topsoil. Real topsoil is a living community of beneficial algae, bacteria, fungi, earthworms and higher level organisms. Discuss stockpiling top soil with your grading contractor.

Other than during construction, soil compaction accumulates so slowly and imperceptivity that by the time symptoms are seen, it has progressed too far. The best and most reliable procedure for preventing it is to specify compaction-resistant soils in the redesign process, together with mulching and various design elements.

Compaction-resistant soils have a large proportion of coarse sand and little silt or clay. Soil with a large proportion of silt or clay is susceptible to compaction, but holds water and nutrients better. A newer engineered soil mix, referred to "structural soil" or "gap-graded" soil can be used in small planting areas, even under paving, but is too expensive to use over large areas. See a more full explanation at http://www.hort.cornell.edu/uhi/outreach/csc/

Adding organic matter in moderate amounts (4 to 5 percent by weight) will tend to diminish compaction. Organic matter lightens the soil, acts as a cementing agent and encourages organisms so necessary to loosening the soil. Further, organic matter contributes some nitrogen to the soil nutrient pool. Most normal types of organic matter break down over a couple years. Only more expensive types, like peat moss will last up to ten years, unless organic matter is being replaced through mulching, and shedding of root hairs. Leaving natural leaf or needle litter below trees is both beneficial and inexpensive.

Also useful in preparing new areas for planting to provide compaction resistance is a polymer known as PAM, by Complete Green Company (310-640-6815). Applied to the soil per directions, PAM provides a more stable soil aggregate, less prone to compaction.

Well-composted, coarse-textured organic mulch should be spread three inches deep around all trees that are surrounded by bare soil or use a six-foot diameter or larger mulch bed around all lawn trees. A thick surface layer of mulch, especially wood chips, will prevent or reduce soil compaction. This method is very useful in heavily trafficked areas where turf is not maintained. Surface mulching will also increase beneficial soil organisms, moderate fluctuations of soil moisture and temperature, improve soil structure and fertility, and increase the depth of roots. Vertical mulching, the drilling of 3 inch diameter or larger holes into the soil, can also mitigate compaction and increase root depth.

A horticultural soils test is needed to check for salts and primary nutrients in future planting spaces. Contact Wallace Laboratories in El Segundo (310-640-6815) to collect samples, analyze and map soil conditions. Fertilizer and other recommendations should be based on the lab recommendations. So-called "balanced" fertilizers should not be used unless and

until recommended by a soil laboratory. Around existing trees, the soil must be moist before any recommended fertilizer is applied. Surface mulching should follow fertilization.

General Discussion

Restricted, shallow or compacted soils on site will limit the health and stability of the new and transplanted trees as much or more than any other factor. Many forests grow on thin soils less than a foot deep, however they are usually more continuous and provide shelter for each other. Roots of forest trees interlock, and if they are the same species, they often fuse with each other. Many of the trees at the MGA facility are fused and interlocked and will provide adequate support for each other *until they are transplanted.*

It is a useful insight to consider the probable condition of these trees five or ten years into the future. Generally, the trees in the more open areas along the west edge and along Prairie have adequate root space if the rooting depth is increased. If the present area remains, but it stays as a compacted area, the future health and longevity will be compromised. Sometime in this five to ten year period their health will probably begin to decline. Mulching and soil aeration could over time double the depth of rooting and greatly extend their longevity.

A transplanted tree with a ten-inch diameter trunk can take ten to fifteen years to recover the roots lost during boxing. During this time, it will need more frequent irrigation, increased pest and disease monitoring, and probably some guying for the first half of that time. Larger trees take disproportionately more time to recover.

Large tree transplanting is a special skill set that requires years of experience, knowledge and expensive heavy equipment. There are only a few well-qualified firms in southern California. Let me know if you would like referrals and contact information. The best results are obtained when your schedule, their schedule and the trees' schedule can line up. This often takes close to a year of lead time. The pines, evergreen pears, and cedars should be transplanted in late fall or winter. The jacarandas, carrotwood and bottle trees should be transplanted in late spring or early summer.

The following tree preservation specifications apply to trees left in place during construction. Recovery time will be considerably less than for relocated trees, but protection is essential. Construction activity places many stress factors even on trees that are not transplanted. All the assurances in the world are not as effective as good fencing in protecting trees during construction.

Tree Preservation Specifications

1. Protection Barrier: A protection barrier shall be installed around the tree or trees to be preserved. The barrier shall be constructed of durable fencing material, such as chain-link fencing. The barrier shall be placed as far from the base of the tree(s) as possible, at least one foot per inch of trunk diameter and beyond the drip-line. The fencing shall be maintained in good repair throughout the duration of the project, and shall not be removed, relocated, or encroached upon without permission of the arborist involved.

2. Storage of Materials: There shall be NO storage of materials or supplies of any kind within the area of the protection barriers. Concrete and cement materials, block, stone, sand and soil shall not be placed within the drip-line of the tree.

3. Fuel Storage: Fuel storage shall NOT be permitted within 150 feet of any tree to be preserved. Refueling, servicing and maintenance of equipment and machinery shall NOT be permitted within 150 feet of protected trees.

4. Debris and Waste Materials: Debris and waste from construction or other activities shall NOT be permitted within protected areas. Wash down of concrete or cement handling equipment, in particular, shall NOT be permitted within 150 feet of protected trees.

5. Planting near Trees Designated for Protection: Any digging within designated protection zones shall done using supersonic air directly as the digging medium, by means of a nozzle, whose nominal rated input pressure (available from manufacturer's literature) must not exceed 130 psig (pounds per square inch at gage) unless otherwise approved. Nozzles designed for input above 130 psig can damage fine roots. Air compressors rated between 100 to 125 psig recommended.

6. Grade Changes: Any grade changes proposed should be approved by a Registered Consulting Arborist before construction begins, and precautions taken to mitigate potential injuries. Grade changes can be particularly damaging to trees. Even as little as two inches of fill can cause the death of a tree. Lowering the grade can destroy major portions of a root system.

7. Damages: Any tree damages or injuries should be reported to the project arborist as soon as possible. Severed roots shall be pruned cleanly to healthy tissue, using proper pruning tools. Broken branches or limbs shall be pruned according to International Society of Arboriculture Pruning Guidelines and ANSI A-300 Pruning Standards.

8. Preventive Measures: Before construction begins and roots are cut, deep irrigation and fertilization of the protected trees are recommended to improve tree vigor and health. Soil analysis testing should be completed to assure fertilization with the appropriate fertilizer products. Pruning of the tree canopies and branches should be done at the direction of the project arborist to remove any dead or broken branches, and to provide the necessary clearances for the construction equipment.

Construction Impact Mitigation

* Establish an unmistakable means of differentiating between trees to be boxed, those to be protected in place, and those to be removed.

* Prior to the demolition phase, install the fencing around the trees to be retained in place. Secure chain-link fencing must be used to keep contractors from storing equipment and supplies in the shade of these trees and thereby polluting and compacting the root zones.

* Immediately mulch all bare soil areas within the root zones of trees to be preserved in place.

* Thoroughly and deeply irrigate all trees as soon as possible and maintain a moist condition throughout the construction period. Maintain the existing irrigation system as long as possible. Cap unneeded heads and repair those around trees to be boxed. As a minimum, try to maintain existing quick couplers near trees to be preserved in place and the storage area. Using a soil test probe, be sure that the soil is moist to at least four feet depth.

* Strong dust control measures should be observed and dusty foliage rinsed at the end of every workweek or as often as necessary.

* A pre-job meeting with the tree moving contractor, project superintendent and consultant is recommended to answer questions and clarify issues related to specific trees or specific situations.

Pruning

* For trees to remain in place, dead branches, poorly attached limbs, and excessively long branches should be shortened according to ANSI A-300 pruning standards. Long end-heavy limbs should be “drop-crotched”. Codominant trunks or limbs should be subordinated, i.e. shorten one side.

* Pines, pears and cedars should be pruned this winter, if construction is far off.

* For trees to be boxed, light pruning of subtropical trees early next summer is permissible. Do not prune the pines or evergreen pears prior to boxing, unless they will not need to be boxed until next year, and then only according to ANSI A-300 pruning standards.

* Do not remove more than 10 percent of the foliage in any one year, in one tree, or 20% on any one branch.

* Good supervision makes the most difference in getting professional quality pruning. A certified arborist or registered consulting arborist needs to supervise the work on site.

Soils

* Perform soil testing of the top two feet of soil in the root zones of any trees that will be boxed. Take a one pound blended sample from the top foot and another separate sample from 12 to 24 inches from each of the trees to be transplanted. The site needs to have the soil conditions mapped so that the best top soils can be stockpiled and reused, also so appropriate treatments can be recommended for new planting and for trees to remain. Contact Wallace Laboratories 365 Coral Circle, El Segundo 90245 for collecting samples, analysis and recommendations.
* Follow the laboratory recommendations for soil amendments 1-2 days after watering.

Limiting Conditions

Allowing the ground covers and weeds to grow over the root crown is a health risk and limits inspection. Inspection of some trees was limited by deep weeds and fallen limbs. Decay, circling roots and girdling roots, if they exist, are often hidden by weeds or debris. No sub-surface or internal testing has been performed.

No information regarding underground utilities or soil conditions was provided or determined.

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Appendix

A. Resume

B. Tree Map

C. Photographic Documentation

D. Glossary

A. RESUME - GREGORY W. APPLEGATE, ASCA, ASLA

Registered Consulting Arborist

PROFESSIONAL REGISTRATIONS:

American Society of Consulting Arborists #365
International Society of Arboriculture, Certified Arborist Number WC-180
International Society of Arboriculture, Tree Risk Assessment Qualified

EXPERIENCE:

Mr. Applegate is an independent consulting arborist. He has been in the horticulture field since 1963, providing professional arboricultural consulting since 1984 within both private and public sectors. His expertise includes appraisal, tree preservation, diagnosis of tree growth problems, construction impact mitigation, environmental assessment, hazard evaluation, pruning programs, species selection and tree health monitoring.

Mr. Applegate has consults for educational institutions, insurance companies, major developers, museums, theme parks, homeowners, homeowners' associations, landscape architects, landscape contractors, property managers, attorneys and cities.

Notable projects on which he has consulted are: Disneyland, Disneyland Hotel, DisneySeas-Tokyo, Disney's Wild Animal Kingdom, the New Tomorrowland, Disney's California Adventure, Disney Hong Kong project, Knott's Berry Farm, J. Paul Getty Museum, Tustin Ranch, Newport Coast, Crystal Court, Newport Fashion Island, Loyola-Marymount, Bixby Ranch Country Club, Playa Vista, Laguna Canyon Road and Myford Road for The Irvine Company, MTA Expo Line, MWD-California Lakes, Paseo Westpark Palms, Cal State Long Beach, Pierce College, UCI, USC, UCLA, LA City College, LA Trade Tech, Riverside City College, Crafton Hills College, MTA projects, and the State of California review of the Landscape Architecture License exam (re: plant materials)

EDUCATION:

Bachelor of Science in Landscape Architecture, California State Polytechnic University, Pomona 1973
Arboricultural Consulting Academy (by ASCA), Arbor-Day Farm, Kansas City 1995
Continuing Education in Arboriculture required to maintain Certified Arborist status and for ASCA membership

PROFESSIONAL AFFILIATIONS:

American Society of Consulting Arborists (ASCA), Full Member
American Society of Landscape Architects (ASLA), Full Member
International Society of Arboriculture (ISA), Regular Member
International Palm Society (IPS), Member
California Tree Failure Report Program, UC Davis, Participant
Street Tree Seminar (STS), Member

COMMUNITY AFFILIATIONS:

Horticulture Advisory Committee, Saddleback College (1988 until present)
California Oak Foundation, member 2008 to present
Landscape Architecture License Exam, Reviewer, Cal Poly Pomona (1986-90)
American Institute of Landscape Architects (L.A.) Board of Directors (1980-82)
California Landscape Architect Student Scholarship Fund - Chairman (1985)
International Society of Arboriculture - Examiner-tree worker certification (1990)
Guest lecturer at UCLA, Cal Poly, Saddleback College, & Palomar Junior College

B. Tree Map

Attached

C. Photographic Documentation

The northeast corner of the site. Note the sparse carrotwoods and tall Aleppo pines.

The northwest corner of the site. Note the sparse carrotwoods and leaning Aleppo pines.

Carrotwoods in the parking islands and outside islands are sparse and declining, and their structure is weak.

Bottle trees along the inside west edge.

All the Shamel ash are weeds along the edge of the channel or east wall.

The browning of this Aleppo pine is probably due to a mite infestation.

More bottle trees along the west edge. The deodar cedars behind are on the other side of the flood control channel.

West corner of the southern portion. The sparse trees in the foreground are paperbarks and behind are the lemon gums.

More sparse lemon gums and paperbarks. The Aleppo pines are more drought tolerant and healthier.

The lemon gums are healthier on the east side of the southern portion.

Paperbarks need more water and are declining in most areas.

Lemon gums along the southeast edge are healthy but weak structurally.

These lemon gums need corrective pruning and dead wood removed.

Looking west through the southeast part of the site.

More Shamel ash weed trees along the southeast edge.

Dead and declining trees are mixed in.

More Shamel ash weed trees along the east edge.

Carrotwoods are healthier in the northeast parking area, but weak structurally.

Carrotwoods are less healthy on the higher north edges of both sides, probably due to irrigation difference due to elevation.

While the Aleppo pines are generally healthy, they have many structural weaknesses.

The few Canary Island pines along the north edge are healthy and have good structure.

The Bradford pears are lifting the sidewalks and structurally weak.

Their openings could be enlarged, but they are not long lived.

A dead Bradford pear.

They all have crowded scaffold limbs and weak attachments.

Note the lifted sidewalk.

This is the best time to replace these street trees.

Note the leaning trunk and girdling root.

➔ These trunks are stump sprouts from the previous Bradford pear. The next tree well is unoccupied.

Southern magnolias on the north side of the building are clones but vary widely in health.


The sparse top indicates root problems or drought, but since the lawn is, green root defects are more likely.

The large ficus is very healthy, but has shallow roots and weak structurally.

Very narrow, but healthy paperbarks due to adequate irrigation.

Magnolias along the west side of the building are adequately healthy.

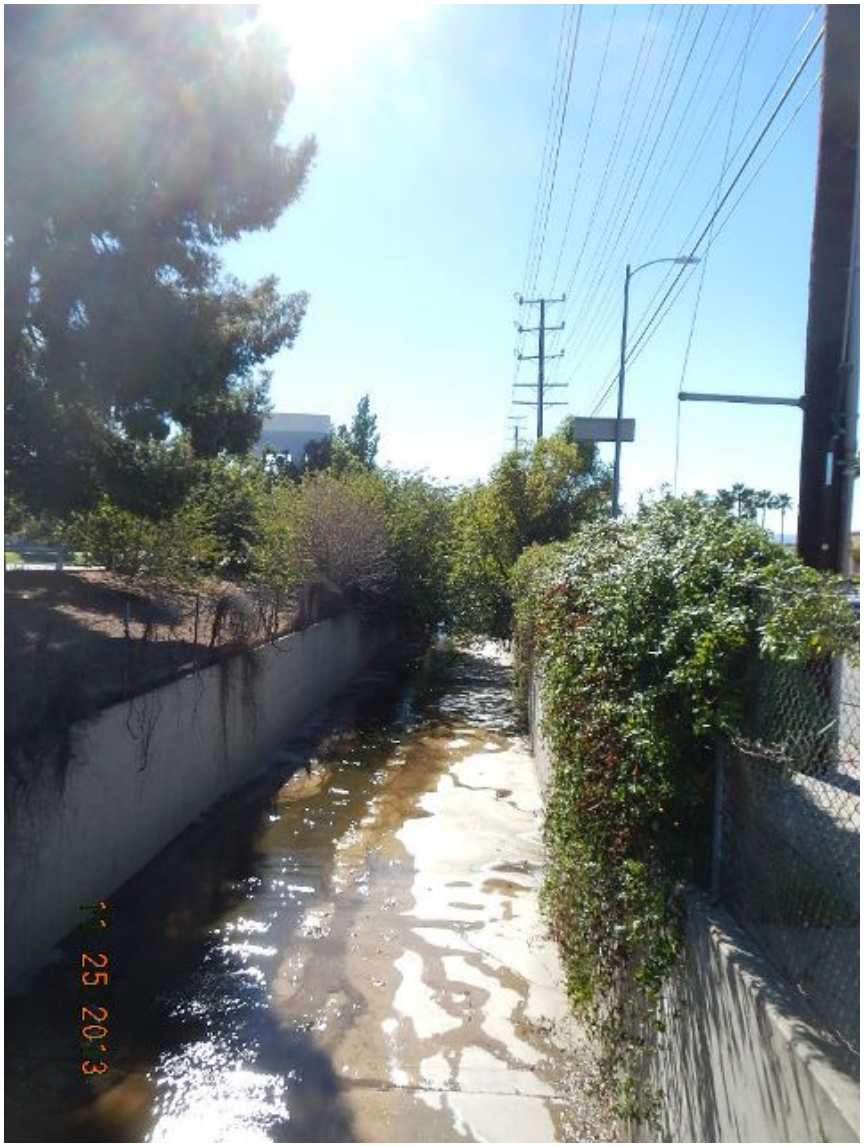
Paperbarks at southwest corner of the building are healthier.

The Aleppo pine is healthy, but the paperbark is declining.

The pines lean out away from the building.

The rest of the paperbarks are severely declining.

Note the fallen Aleppo pine in the foreground.



Looking south down the flood control channel.

Various trees and honeysuckle in 18” square cutouts along the channel.

Shamel ash are growing in tight spots along both sides of the channel.

A jacaranda in a small opening and intertwined in the fence.

Planting Canary Island pine street trees below the wires was a mistake

The tree wells are also too small for these pines.

The collars around the base are girdling the trunks.

This Chinese elm is also a weed tree or stump sprout.

The evergreen pears are drought stressed and weak structurally.

Many of the deodars were topped and codominant.

The street trees are crowed above and below ground.

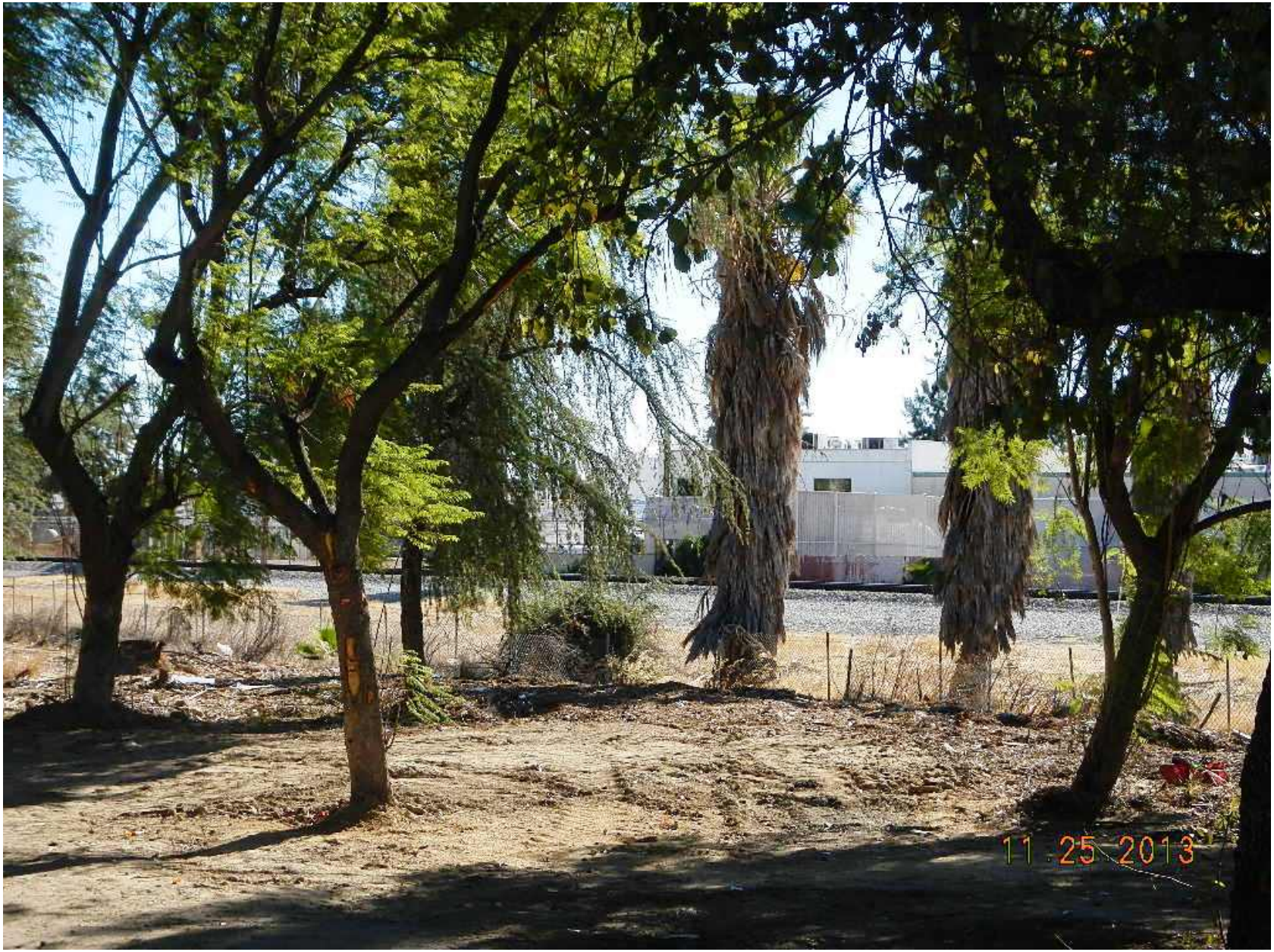
This deodar was leaning into the wires and had to be topped.

Who knows why this deodar was topped.

This larger jacaranda is lifting the sidewalk.

More topped and crowded deodars.

Many of the trees at the south end of the western strip are over-crowded and have awkward form.



This area was graded and the equipment damaged tree trunks and limbs. Fill was left over the roots.

This fresh fill will soon begin to affect the health of these trees adversely.

Note the burned stumps of Mexican fan palms just south of the channel.

Note the recent damage to this deodar.

Mexican fan palms along the south edge of the south part of the channel

D. Glossary

ANSI-A300	American National Standards Institute performance standards for the care and maintenance of trees, shrubs and other woody plants.
ANSI-Z60-1	American National Standards Institute standards sizing and describing trees, shrubs and other nursery stock.
Apical dominance	Relative strength of the central leader compared to lateral branches.
Arboricultural	Pertaining to the awareness, care, evaluation, identification, growing, maintenance, management, planting, selection, treatment, understanding, valuation and so forth of trees and other woody plants and their growing environments, particularly in shade and ornamental (non-crop/commodity) settings.
Arboriculture	The selection, cultivation, and care of trees, vines, and shrubs.
Arborist	A person possessing the technical competence through experience and related training to provide for or supervise the management of trees or other woody plants in a landscape setting.
ASCA	The American Society of Consulting Arborists, Inc. a professional society, as described in its by-laws.
Bark	Tissue on the outside of the vascular cambium. Bark is usually divided into inner bark - active phloem and aging and dead crushed phloem - and outer bark.
Biotic	Pertaining to living organisms.
Branch angle	The angle of attachment between two branches.
Cabling	Installation of steel cables, attached to lag screws or bolts placed in tree limbs, to provide additional support or to limit movement and stress of limbs.
Caliper	Diameter of a nursery-grown or small size tree trunk. Larger trees are usually measured at 4ð feet (see DBH) Trees with calipers 4 inches and below are measured at 6 inches above grade(ANSI Z60-1-1990) Trees above 4 inches, but still transplantable are measured at 12 inches above grade.
Canopy	The part of the crown composed of foliage and twigs, for an individual tree or collective group of trees.

Cavity	An open and exposed area of wood, where the bark is missing and internal wood has been decayed and dissolved.
Central leader	The main stem of the tree.
Chlorotic	Also Chlorosis. A condition of the plant marked by yellowing of normally green foliage, often indicating nutrient deficiency or plant dysfunction.
Codominant	Leaders equal in size and relative importance, developed from two apical buds at the top of a stem. Each codominant stem is an extension of the stem below it. There are no branch collars or trunk collars at the bases of codominant stems.
Compaction	(Soil Compaction) The compression of soil, causing a reduction of pore space and an increase in the bulk density of the soil. Tree roots cannot grow in compacted soil.
Compartmentalize	To seal off decay. The ability of the tree to restrict the spread of invasive organisms, such as decay fungi, by means of internal changes in cell structure and chemistry.
Conifer	Cone bearing shrub or tree, e.g. pines and cypress (or modified cone-like structure as in Podocarpus and Taxus)
Crack	Longitudinal split in the stem, involving bark, cambium and xylem (versus growth crack) may be vertically or horizontally oriented.
Crotch	The union of two or more branches; the axillary zone between branches.
Crown	The upper portions of a tree or shrub, including the main limbs, branches, and twigs.
Crown reduction	Removal of large branches and/or cutting back to large laterals to reduce the height or width of the crown; frequently referred to as “drop crotch” pruning – corresponds to National Arborist Association Class IV pruning.
Crown restoration	Restructuring of natural and/or structurally sound form to a tree that has been previously topped or damaged.
Cultivar	A cultivated variety. Maybe a field selection or a horticultural variety that has originated and persisted under cultivation. Usually enclosed in single quotes after the genus and species names.
DBH	Diameter of the trunk, measured at breast height or 54 inches above the average grade. See caliper.
Decay	Progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function. In wood, the loss of structural strength.

Deciduous	Trees which shed their leaves at the end of the growing season.
Decline	Progressive reduction of health or vigor of a plant.
Defect	Any structural weakness or deformity.
Dieback	Progressive death of buds, twigs and branch tissues, on individual limbs, or throughout the canopy.
Dripline	A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.
Drop-crotching	Shortening a limb by pruning to an inner branch large enough to assume the terminal role.
Evergreen	retains its leaves throughout the year.
Fertilization	The process of adding nutrients to a tree or plant; usually done by incorporating the nutrients into the soil, but sometimes by foliar application or injection directly into living tissues.
Fill (Soil)	Altering the soil level to raise the elevation of the surface, addition of soil. (See cut)
Foliage	The live leaves or needles of the tree; the plant part primarily responsible for photosynthesis.
Genus	A more or less closely related and definable group of plants, including one or more species.
Hardscape	The sidewalk, curb, gutter, paving or other concrete permanent features.
Hazard	The combination of a likely failure of a tree or tree part with the presence of a likely target.
Heading	Pruning techniques where the cut is made to a bud, weak lateral branch or stub.
Included bark	Bark or cortex tissue that is included or trapped between close-growing branches. Usually found in narrow or tight crotches.
Leader	A main stem or branch of a tree that is (usually) codominant with other main stems.
Limb	A large lateral branch growing from the main trunk.
Lion-tailing	Pruning technique where internal foliage and branches are removed, leaving the latter concentrated at branch ends.
Mulch or Mulching	Substances spread on top of the ground to conserve water, protect against erosion, retain moisture, and protect the roots of trees from heat, cold or drought. The substances are typically organic, such as compost, manure or bark chips.

Mycorrhizae	A term given to the symbiotic relationship between roots and certain beneficial fungi. Mycorrhizae are the combined root / fungal growth.
Narrow crotch	Also tight crotch. A crotch with a narrow angle between branches, often having included bark.
Pathogen	A disease-causing organism, usually a fungus in plants, but may also be viral or bacterial.
Prune or pruning	Selective removal of woody plant parts of any size, using saws, pruners, clippers, or other pruning tools.
Restructuring	Restoration of a natural and/or structurally sound form to a tree, which has been previously topped or damaged. Also known as “crown restoration”.
Root crown	Area at the base of a tree where the roots and stem merge (synonym - root collar)
Root flare	The basal area of the trunk that flares or widens, and merges with the main roots. see root crown
Root system	The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.
Root zone	The area and volume of soil around the tree in which roots are normally found. May extend to three or more times the branch spread of the tree, or several times the height of the tree.
Scaffold limb	Primary structural branch of the crown.
Shrub	A relatively low woody plant with several stems arising near the ground.
Soil Grade	Also Grade level. The level of the soil in an area; topographic elevation.
Stress	"Stress is a potentially injurious, reversible condition, caused by energy drain, disruption, or blockage, or by life processes operating near the limits for which they were genetically programmed." Alex Shigo
Taper	Relative change in diameter with length - reflects ability of stem or branch to distribute stress evenly.
Thinning	Pruning technique where branches are removed at their point of origin or to a large lateral at least on half the diameter of the removed branch.
Topping	The practice of cutting large limbs back severely, without regard to form or habit of the tree. Cuts are usually made between lateral branch nodes. This practice is extremely injurious to trees, and promotes decay in the canopy.
Trees	An arborescent woody plant, with a single or few trunks near the base

Value	The relative worth, merit, or importance of a thing, expressed as a single point, a range, or a relationship to a benchmark. The present worth of future benefits.
Vertical mulching	Ventilation of soil by auguring holes in a regular pattern. Usually the holes are backfilled with amended soil, but small holes may be left open.
Vigor	Active, healthy growth of plants: ability to respond to stress factors.

Certification

I, Gregory W. Applegate, certify to the best of my knowledge and belief:

That the statements of fact contained in this report, are true and correct. That the report analysis, opinions, and conclusions are limited only the reported assumptions and limiting conditions, and are my personal unbiased professional analysis, opinions and conclusions.

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

That my compensation is not contingent upon the reporting that favors the cause of the client or the attainment of stipulated result.

That my analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity with the standards of arboricultural practice.

That I have made a personal inspection of the plants that are the subject of this report. No one provided significant professional assistance to the person signing this report.

Gregory W. Applegate_____ Date_12-2-13_____

Registered Consulting Arborist #365
Tree Risk Assessment Qualified (PNC-444)
Certified Arborist WE-0180a

Disclaimer

This consultant does not verify the safely or health of any tree on this site for any period of time. Construction activities are hazardous to trees and cause many short and long-term injuries that can cause trees to die or topple. Transplanting large trees cuts about 90 percent of the roots and some death and decline does occur.

A tree hazard evaluation was not requested or performed. Even when every tree is inspected, inspection involves sampling; therefore some areas of decay or disease may be missed. Weather, winds and the magnitude and direction of storms are not predictable and some failures may still occur despite the best application of high professional standards.

Root systems provide support for trees, but are hidden under ground. Even the portions of the root system that are at the surface, such as the root crown, were often hidden by ground cover or shrubs. Future tree maintenance will also affect the trees health and stability and is not under the supervision or scrutiny of this consultant. Future construction activity such as trenching will also affect their health and safety, but are unknown and unsupervised by this consultant. Trees are living, dynamic organisms and their future status cannot be predicted with complete certainty by any expert. This consultant assumes no liability for any tree failures involved with this project