



Grand View Memorial Park – May 2007 Tree Survey and Evaluation

SUMMARY: Grand View Memorial Park in the City of Glendale is like other cemeteries in that it contains a number of shade trees. Trees in cemeteries have a particular large responsibility to bear: to share to their absolute capacity their amenity benefits – imposing yet peaceful and calming greenery, cooling shade, clean air, visual perspective, architectural balance and form, and a feeling of tall yet quiet nature. Cemeteries are particularly ideal sites for trees because they are less subject to the usual public works ‘abuses’ when growing in a narrow parkway (and being root pruned) or when enduring a harsh existence in a bone-dry and soil-compacted tree well in a heavily trafficked city arterial. Trees in cemeteries are more likely to be ‘well fed’ in the form of regular irrigation, and consequently some remarkable tree specimens are often found in cemeteries throughout the southern California basin. However, like anything and everything else in life and death, their benefits incur a cost. Trees require periodic maintenance treatments in order to keep them clean, mitigate any risks they may present, and permit them to continue to thrive or maintain stable health. Also, trees live a life much like people in that they go through the usual life stages of youth, maturity, senescence, and eventually death, and occasionally trees may even evolve, due to age or to other ‘at risk’ factors, into a condition or a situation that would necessitate having to remove them even though they may show all the signs of decent health. Therefore, because of this particular status that trees in cemeteries have (or should have), it is imperative that they be properly maintained at a necessary financial cost. It may seem fine or natural to neglect such trees, in the interest of *let them be*, but the longer the neglect proceeds the more difficult the catching-up is, much in the same way that the greater that a financial debt builds, the exponentially higher any percentage gains have to be just to break even, though still at a loss of time. Urban trees (which includes trees in a cemetery) in particular can cause a lot of problems if they are neglected, and such neglect will more likely than not create serious problems for those asked to maintain them.

LOCATION AND GENERAL FEATURES: Grand View Memorial Park is located in the western part of the City. It is bounded by Grandview Avenue to the east, Glenwood Road to the south, Sonora Avenue to the west, and Kenneth Road to the north. Its grounds are generally flat, although overall there is a very slight upward slope to the north, and this would suggest that the location is on the southern foothills of the Verdugo Mountains. A plot map that was provided (and which I have attached) shows different areas of the grounds labeled as different sections, and the inventory uses (and modifies) these labels for convenience; I used thirteen (13) sections, labeled alphabetically from “A” to “M”.



THE TREES: The inventory includes 355 trees, comprising of 29 different species¹. Attached are two lists; one is a *Tree Species Inventory*, which includes:

- The species
- Total number of each species in each section
- Total number of species
- Total number of trees in each section

I have also included in this list SAR (*species appraisal rating*), which is used by arborists when appraising trees. The percentages denote value or desirability; thus, a higher percentage such as 90% suggests a species that will usually have greater value (or will appraise higher) than a species that has a 50% rating. The other list is the *Individual Tree List*, which is a tree-by-tree data list; the attributes include:

- Tag Number; each species has (or should have) a metal tag;
- Section (see above);
- Species (using common name);
- Trunk Diameter (TD); these are either the DBH (diameter at breast height, 54" above ground) or at a suitable location to take a measurement on the trunk; in inches;
- Height (HGT); these are ranges;
- Health; an assessment of health based on visual appearance;
- Structural Condition (STRCDN); an assessment of the structural condition, either ingrained / inherited (biotic) or environmental (abiotic); to the latter I would include past maintenance practices;
- Hazard Rating (HR); a composite rating based on the ISA Hazard Rating;
- 1st Recommendation (1st Rec); primary maintenance recommendation;
- 2nd Recommendation (2nd Rec); secondary recommendation;
- Option; generally a third option to consider.

See the attached *Key* for explanations of the codes that are used in these lists.

OUTLOOK: The outlook for many of the trees in Grand View Memorial Park can be summed up in one word: *troubled*. More specifically:

1. Obviously the one single factor adversely impacting most of these trees is the mere lack of water. One problem is of course the fact that the grounds are not being irrigated, as is clearly evident by the dry grass that covers most of the plot sections. The second problem is that the southern California basin is at the end of what is being widely reported in the media as the driest rainy season on record. This past season follows another below-normal rainy season². The season prior to this is considered one of the wettest on record, and so it would seem safe to

¹ The actual number of trees may be disputed higher or lower depending on the definition of 'tree', but for the purposes of this report I included specimens that I believed were most notable and ignored other specimens, and there were several specimens that were not included due to access issues. The actual number of species can also be disputed since variation may exist among some species, but I consider the list accurate and sufficient.

² <http://www.wrh.noaa.gov/lox/getrwr.php?sid=ca&node=lox>



conclude that these trees have not had any meaningful irrigation since early 2005 (over 2 years). Of course, each genera or type of trees react to such adversities differently, with the native fan palms and coniferous species (the pines, cypresses, and cedars) enduring exceptionally well (although some California Fan Palms are infected with Diamond scale³ and the cedars are showing signs of drought stress) and the moisture loving Asian broadleaf evergreens (the camphors and privets) suffering the worst. Nevertheless, prolonged dry conditions are ultimately damaging to all trees, and the stresses they undergo make them more subject to pest infestations and other issues that in turn can create safety risks, in particular an incident when a large scaffold limb suddenly breaks and falls, potentially causing property damage (to a gravestone or a parked car) or serious bodily harm (a limb bonking someone on the head) (see #3).

2. These prolonged dry conditions are highly conducive to fire. While the dry grass is not exactly tall, a number of tree species that have their share of 'dry but attached waste' are highly susceptible to fire, and it is reasonable to speculate that one minor mishap with matches, a lighter, candles, incense, or tobacco can cause quick fire damage within the cemetery grounds and can possibly spread to outlying neighborhoods causing even greater damage or bodily harm.
3. There is an arboricultural phenomenon known as '*summer limb drop*'. This is an occurrence where during the warmer months (usually but not always in the summer) and during periods of rather high temperatures, a scaffold limb will suddenly break and fall (see the two attached explanations, both of which provide more detailed explanations). The bad news is that these events cannot be predicted, because limbs that have no visible structural flaws (i.e., a noticeable linear crack) are the ones that tend to break, and these incidents are said to often occur during windless periods, when one would normally expect such incidents NOT to occur. The only possible good news might be that one of the explanations states that such incidents are more likely to occur on vigorously growing trees (which most of these trees are not), and so one can infer from this that the trees in the cemetery would be at lower risk. However, this phenomenon is pretty much tied in some way shape or form to water, temperature, and wood properties (expansion and contraction), and so it would seem absolutely reasonable to speculate that any irrigation that is suddenly applied to these trees prior to the summer, no matter how badly they need it, may exacerbate this unpredictable and violent event. Thus, the solution to solving drought issues to benefit tree health and reduce fire risk may in turn incite this still somewhat unexplainable phenomenon.
4. Local gusty winds will continue to cause limb fractures or frond drop (from the palms) on many of these trees, since many of them are structurally unsound due to age, species habit, decay, consequences of past pruning, termite infestation, or previous limb fractures – it is said that trees that have experienced a scaffold limb

³ Diamond scale is a type of fungal pathogen that is especially prevalent on this palm species; it tends to spread rapidly on the fronds of drought stressed California Fan Palms and can contribute to tree stress since it causes fronds, the sole region of photosynthetic activity on palms, to die prematurely.



fracture are often labeled 'repeat offenders' since anecdotal evidence shows that these trees usually experience more such incidents. Appropriate pruning treatments can reduce the odds of some of these incidents occurring, but one would be ill-advised to believe that any such maintenance treatments will eliminate to satisfaction the *troubled* outlook for many of these trees in the cemetery.

RECOMMENDATIONS: Appropriate maintenance recommendations for each tree are included in the attached *Individual Tree List*. Review the attached *Key* for specifics. I will note here, however, that of the 355 trees, I am recommending that 56 trees be removed due to:

- Death
- Advanced declining health
- Serious structural problems creating excessive risk
- Potential migraine headache down the road

Bear in mind that while removing the aboveground portion of trees may be a simple task in the hands of qualified professional tree workers, removing stumps will be a serious challenge, especially in a cemetery.

COSTS: The current average bid price (for most L.A. and northern Orange County municipalities) for *pruning* a street tree is about \$86. The low end is about \$59 (which one can apply to smaller trees) and the high end is about \$144 (for larger trees, although many would consider this amount too low). However, *pruning* defined here consists of only *crown cleaning*, *crown raising*, and modest *thinning*⁴. While it is possible to apply this type of pruning treatment to the trees in the cemetery, it would be absurd to think that such costs can be applied in the same way due to the peculiar logistics of working in a cemetery – much more care must be applied when performing ANY tree operations due to potential damage to standing gravestones, limited access to certain trees and limited mobility due to the narrow road that runs thru the cemetery grounds, working near the utility lines that run along Glenwood Road – and thus it is better to expect that prices will be far above (at least double or treble) this \$86 average *for this basic pruning treatment*, and considerably more for the tall Shamel Ash trees. Regardless, most of the medium to larger size shade trees require removing defective limbs (those with confirmed decay or those that are splinters from previous fractures) or would require serious side or top *crown reduction*⁵ in order to reduce the risk of a limb breaking, and thus for the larger shade trees the pruning costs are going to run in excess of \$500 per tree. Standard removal prices for street trees are usually based on trunk diameter, and the

⁴ *Crown cleaning* means removing only dead or broken branches or small (>2") limbs; *crown raising* means removing small branches consisting of dead or live growth (usually end growth) that is hanging too low to the extent that it is obstructing clearance by pedestrian or vehicle; *thinning* means removing sections of live tip growth from certain areas of the upper crown of the tree, the purpose being to reduce some weight off of the branch from which it originates.

⁵ *Crown reduction* is a pruning treatment that attempts to reduce the size of the crown by pruning back outer or upper scaffold limbs to suitable lateral branches. It is an aggressive treatment that while having great benefits also has its drawbacks.



average bid price is about \$20 per inch (and this includes the stump removal). Again, throw this street tree price out the window and expect costs in excess of \$2,000.00 to remove the aboveground portion of one large Shamel Ash, or at least \$40 - \$45 per inch of trunk diameter as a standard rate.

Thus, for the sake of providing some AVERAGE estimates to ponder when considering basic one time pruning (and not those recommended in this report) and aboveground removal costs of those trees recommended (1st) for removal, assuming the high end street tree bid price for pruning and the average bid price for removal:

- PRUNING @ \$144 per tree x 300 trees = \$43,200.00
- REMOVAL @ \$20 per inch x 23" average trunk diameter per tree = \$460.00 per tree x 56 trees = \$25,760.00

Having provided these numbers, it would certainly be advantageous, now that the City has an accurate inventory of the existing tree population, to filter through the lists and select those trees that need immediate attention for pruning and for removal, and then obtain bids (or forward this information to the State of California) for performing the higher priority work. It would pretty much be a waste of time and money to expend energy on pruning Italian Cypress that do not really need it or to spend money on pruning some of the Mexican Fan Palms, since during my visit a number of them had few if any brown fronds. Right now the immediate focus should primarily be on:

- Camphor Trees (pruning and removal);
- California Fan Palms (cleaning to mitigate risk of a falling skirt);
- Shamel Ash (pruning and removal); since this group is generally the largest bunch and are also seen as high-risk, I strongly advise that you consider the benefits of removing all of the large specimens (as I have indicated in the List), but keep in mind that per tree expect to pay in excess of \$2,000, thus aboveground removal of just five specimens may well cost over \$10,000;
- Bottle Trees (pruning and removal);
- Glossy Privets (mainly removal);
- Canary Island Date Palms (mainly cleaning to mitigate risk of falling dead fronds but remove one due to risk of a trunk split);
- Horsetail Trees (pruning and removal);
- Deodar Cedars (pruning);
- Any other trees that are 1st recommended for removal.

Dealing with this group of species or trees first should be a good first step with trying to get a handle on the tree management issue in the cemetery.

FINAL COMMENT: An attempt has been made here to provide as much reliable information and to provide the best management steps in dealing with this group of trees. Keep in mind though the benefits of annual evaluations for at least the next two years. Conditions change and so it is imperative that such changes are duly noted and that recommendations be revised to deal with such changes. Not following up is merely more neglect, which would seem unacceptable at this point in time.