

ORDINANCE CONTROL OF STREET TREES

by Philip A. Barker

An important part of county or municipal code is the ordinance that provides for the planting and maintenance of street trees. Regardless of who conceives it or draws it up, a tree ordinance is, in effect, a manifesto from the citizens specifying to the public officials the manner in which the street trees in their community should be planted and maintained. The beauty and comfort of the community, which an affective tree ordinance can help to assure, is undeniably, the basis for which it is brought into existence. Usually few residents are well informed about street trees and so, advisedly, the drafting of such an important part of the code is carried out under the guidance of certain public officials. Currently, numerous cities and counties, through their public officials, are interested either in up-dating their tree ordinance or in adopting one for the first time. In doing so it is common practice to search other ordinances for sections worthy of inclusion in their own.

Existing Tree Ordinance Provisions

Almost unanimously, the existing tree ordinances delegate to a public official, such as a director of parks and recreation or a director of public works, responsibility for planting and maintaining the street trees. Moreover, these same ordinances frequently provide for the issuance of permits which enable, and often require, property owners to carry out these delegated responsibilities. Sometimes, too, tree ordinances provide for a listing of trees that may and may not be planted. By referring to such a list, property owners may then select one for planting along the street in front of their property. Provision for issuing permits to enable property owners to prune the street trees is also contained in some ordinances.

Admittedly the issuance of permits as noted above has the value of enabling property own-

ers to assume some personal interest in the well-being of the street trees in front of their property. Such interest is certainly to be encouraged. There are, however, certain built-in hazards of the permit system. Not the least of these is the improper pruning that street trees frequently receive at the hands of property owners unskilled in the fundamentals of tree growth. For most satisfactory framework branch development, it is desirable that trees receive so-called training pruning during the first three to five years after they have been planted in the landscape. When done properly, such pruning diminishes the possibility of dangerous limb breakage as the trees increase in size. Ideally this type of pruning, as well as other pruning practices, needs to be done by a skilled pruner.

Based on over-all community beauty and safety of the trees therein, the most effective street tree programs are those in which the city or county assumes full responsibility; where the necessary work is done either on a contractual basis or with its own personnel.

Trees in Older Urban Areas

Normally, cities and counties have two somewhat contrasting situations for which a single tree ordinance is designed to function. One is the older areas, where the imposing problems are the maintenance and replacement of old and often decadent trees. The high cost of both of these operations in a city's older areas requires progressive solutions. An important consideration here is the trees' effective longevity. Like buildings, many should be amortized and replaced as their maintenance cost, hazard, and unattractiveness increase to a point of diminishing returns. To do this requires a vigorous and continual "sales" program on informing residents about the liabilities inherent in decadent trees, and the value of quality replace-

ment trees. On the other hand, some trees like many of the oaks attain their greatest charm and value with age. Just as vigorous campaigns need to be waged for the preservation of these community heritages, but usually on an individual tree basis.

Maintenance of a community's trees that are reaching maturity must include an occasional pruning. It is of paramount importance that a community do, or contract to be done, only that kind of pruning that, in addition to eliminating any hazardous conditions, also retains the natural character and beauty of each tree. Reducing a tree to mere limb stubs, is not good pruning. If such drastic treatment is necessary, then spare the landscape of a caustic blemish by removing the tree entirely. So-called drop-crotch pruning, as practiced by competent arborists, can provide the desired safety and also preserve the natural beauty in a tree.

Trees in Newer Urban Areas

Concomitant with the needs for dealing with tree problems of older areas are the more pressing ones of the new areas, where decisions must be made about the kinds of trees to be planted, the number of kinds that should be planted along any street, their spacing, who shall plant them and how, and, of primary importance, the availability of them in the nurseries. Once the trees are planted, the die is cast — the character of a community's landscape for the next 50 or even 100 years has been created. For this reason, especially, primary attention and expenditures should be directed toward trees in the subdivision developments.

As pointed out above, many ordinances control the selection of trees for planting by the simple expediency of providing a list of what is often called official trees from which a subdivider or anyone else may select the trees for planting. This procedure is comparable in principle to a listing of several road surfacing materials, such as gravel, asphalt, or concrete, and then permitting the free choice and use of them by each property owner. Selection of trees from such a list often results in the planting of only

a few kinds of trees - those that are most readily available at the lowest price. Seldom has such a practice resulted in tree-lined avenues of appealing beauty. On the other hand, it has often created serious maintenance problems. For this reason, the practice of enabling property owners to select a tree from a list of official trees has inherent shortcomings.

Tree Population Density Plan

A solution to the problem is to specify in the tree ordinance that selection and planting is to be based on tree population density. Revolving around an up-to-date tree inventory, it would provide that, in a given period of time, a particular kind of tree could be planted to a certain maximum population density within a community. For example, in a community where the total tree population within a given 5 year period was expected to reach 10,000, there could be planted by the end of that period 500 of whichever trees may have been scheduled for planting to a 5% density.

Coupled with the population density plan would be a master list of trees grouped in categories according to the extent to which they could be planted. A prototype of such a master list, applicable in this case to a city of Central California, is presented as Appendix A. The four categories in which the trees are listed and the maximum population density (MPD) for trees within each category is as follows: Liberal Use, MPD 5%; Limited Use, MPD 2%; Candidate Use, MPD 0.3% and Deferred Use, MPD adequate for the period. At the end of any period, possibly a 5 year period, the master tree list would be reviewed and the trees shifted to different categories depending upon their performance during the previous period and upon the projected total tree population at the end of the next period.

If the projected total tree population for the succeeding period was only a nominal increase the trees that had been listed under Liberal Use during the previous period may be shifted to Deferred Use, as with trees in other categories which had been planted to the maximum popu-

lation density. But, with the rapid rate of subdivision development today, it is probable that trees listed under Limited Use and those under Candidate Use which performed satisfactorily, could be shifted to categories of higher use densities.

As already stated, the Deferred Use category would contain trees that shall not be used during the forthcoming period. The reasons are various. In some cases they might be nonexistent in the area and the listing of them would simply signify that they were considered to be either too tender or that they have some undesirable characteristics. Regarding tenderness, for instance, the jacaranda, *Jacaranda acutifolia*, while a handsome tree in the milder parts of California, would not be sufficiently hardy in colder climates. The same is true for Brazilian peppertree, *Schinus terebinthifolius* and for most species of Pittosporum. Branches of certain species of *Evodia*, such as Korean-ash, *E. hupehensis*, break off so readily in wind that their use is precluded. The pecan, *Carya illinoensis*, may become so seriously infested with aphids to ever warrant its use as a street tree. Trees like the planetree, *Platanus acerifolia*, would be placed in the Deferred Use category for a different reason - because they are already over-planted. Trees fitting all of these examples so far given would undoubtedly always remain in the Deferred Use category, although not necessarily.

Numerous tree ordinances contain a list of prohibited trees which include many of those just mentioned. However, use of this term could have antagonizing connotations to a person who has great admiration for a tree which another person, better informed perhaps, might consider totally unworthy for street tree use. Because of these possible differing viewpoints, the Deferred Use category seems to be a more diplomatic way to curb a tree's use.

Assigning trees to these various categories for a particular period should be done by a competent public official preferably under the direction of the park director. Conceivably, the decisions of the park director could be over-ridden by the property owners, which, of course, is the desirable privilege of a democracy. In

final analysis, all Deferred Use trees would be subject to recall by the citizens into one of the other three categories.

Such a master tree list should provide adequate flexibility for the planting of numerous kinds of trees and it should simultaneously eliminate the wholesale planting of only a few kinds. Further, it should serve as a guide by which competent public officials may select what might be called the official tree or trees for a particular street. The effectiveness of the list would depend upon the maintenance of an up-to-date tree inventory. A current accounting of all trees planted and removed would be necessary. As mentioned before, rather than leaving the choice to the property owner, a public official should designate which tree or trees would be the official one for any of the streets.

Monotypic Planting Recommended

The number of kinds of trees that might be specified for planting along any street could vary, of course, even with the population density system. Frequently one hears admonitions against the so-called monotypic planting along streets. But for practicality of tree maintenance and for greatest avenue attractiveness, there is ample evidence to justify the planting of a single kind or alternate kinds of trees along a street. Furthermore, the beauty of a street canopied with single kind of tree is unsurpassed.

Equivalent Tree Cost to Developers

In new subdivisions, particularly those financed under FHA terms, street trees are most often planted by the developer. If public officials were to specify an official tree for each new street, the desirability of this practice being already pointed out, inequities could occur if one developer had to plant trees which cost him \$3.00 each and another developer required to plant \$9.00 trees. A solution to this is for the city or county having jurisdiction over the area being developed, to assume responsibility itself for purchasing, planting, and maintaining all street trees; this program to be funded in part

by street tree assessments paid by the developer. A few cities already are making such assessments, on either a per lot or a lot-front footage basis. Because lots vary in size, the lot-front footage assessment seems preferable. Either way, the assessment amounts to \$10.00-\$15.00 per lot. The advantages that derive from a street tree assessment are many, for both the developer and city and county. First, all developers pay relatively the same, regardless of the differential cost of different kinds of trees which might be planted. Also, trees need not be planted until a house is occupied, resulting in better tree survival. Further, tree planting may be scheduled during the winter months only, again to assure best tree performance.

This plan does not obligate the city or county to do the actual planting, for, if preferred, it could have the planting done on a contractual basis. If however, its work force had certain slack season, it could do the tree planting at these times.

Over and above any advantages already cited, city or county responsibility for street

tree planting has the decided advantage of acquiring various kinds of trees, otherwise unavailable, by either purchasing for future delivery or by letting production contracts for them. Using either method, a city or county could, by projecting ahead a few years, estimate the probable total number of trees needed and order accordingly.

With any effort as with any commodity, there are quality differences. It should be remembered that the appearance of any community, its landscape and its trees, is the first thing noticed by any visitor. Adequate water mains and sewers, along with other valuable assets, will mean little to a visitor, or a resident, if the landscape features are unattractive. The trees in any community are, in general, one of its principal prides. This pride, can reach its greatest fruition where tree selection and tree maintenance are of high quality.

*USDA Forest Service
Forestry Sciences Laboratory
Logan, Utah*

APPENDIX A.

Prototype of a Master List of Trees for Street Use in a Central California City

Legend: (evg.), evergreen; *, Suitable only in parkways four feet wide or more.

Liberal Use — Population not to exceed 5% of total street trees within city.

<i>Celtis australis</i> *	<i>Ligustrum lucidum</i> (evg.)
<i>Gleditsia triacanthos</i> , selected clones*	<i>Pistacia chinensis</i> , male selections*
<i>Lagerstroemia indica</i>	

Limited Use — Population not to exceed 2% of total street trees within city.

<i>Alnus cordata</i> *	<i>Pinus canariensis</i> (evg.)*
<i>Alnus rhombifolia</i> *	<i>Pinus pinaster</i> (evg.)*
<i>Cinnamomum camphora</i> (evg.)*	<i>Prunus cerasifera</i> , purple-leaved selections
<i>Cedrus deodars</i> (evg.)*	<i>Quercus agrifolia</i> (evg.)*
<i>Crataegus phaenopyrum</i>	<i>Quercus ilex</i> (evg.)*
<i>Fraxinus holotricha</i>	<i>Quercus palustris</i> *
<i>Koeleruteria paniculata</i>	<i>Quercus suber</i> (evg.)*
<i>Laurus nobilis</i> (evg.)	<i>Sophora japonica</i> *
<i>Liquidambar styraciflua</i> *	<i>Tilia euchlora</i> *
<i>Maytenus boaria</i> (evg.)	<i>Zelkova serrata</i>

Candidate Use — Population not to exceed 0.3% of total street trees within city.

<i>Acer buergerianum</i>	<i>Lithocarpus densiflora</i> (evg.)
<i>Acer campestre</i>	<i>Liriodendron tulipifera</i> *
<i>Acer trautvetteri</i>	<i>Maackia amurensis</i>
<i>Acer truncatum</i>	<i>Maclura pomifera</i> , male selections*
<i>Acer pseudoplatanus</i> *	<i>Malus</i> spp., crab apple selections
<i>Aesculus carnea</i> , selected clones*	<i>Morus alba</i> , male selections*
<i>Albizia julibrissin</i>	<i>Morus nigra</i> , male selections*
<i>Arbutus unedo</i> (evg.)	<i>Osmanthus americanus</i> (evg.)
<i>Broussonetia papyrifera</i> *	<i>Parkinsonia aculeata</i> f (evg.)
<i>Carpinus</i> spp.	<i>Pinus radiata</i> (evg.)
<i>Casuarina stricta</i>	<i>Pistacia vera</i> , male selections
<i>Ceratonia siliqua</i>	<i>Prunus laurocerasus</i> (evg.)
<i>Chilopsis linearis</i>	<i>Pyrus kawakami</i>
<i>Corylus colurna</i>	<i>Pyrus calleryana</i> 'Bradford'
<i>Crataegus lavallei</i>	<i>Quillaja saponaria</i> (evg)*
<i>Crataegus mollis</i>	<i>Rhus lancea</i> (evg.)
<i>Crataegus succulenta</i>	<i>Sapium sebiferum</i>
<i>Eriobotrya deflexa</i> (evg.)	<i>Schinus polygamus</i> (evg.)
<i>Erythra edulis</i> (palm)	<i>Taxodium distichum</i> *
<i>Euccomia ulmoides</i>	<i>Tilia cordata</i> *
<i>Fagus sylvatica</i> , selected clones*	<i>Tristania laurina</i> (evg.)
<i>Fraxinus ornus</i>	<i>Umbellularia californica</i> (evg.)*
<i>Ginkgo biloba</i> , male selections*	Other promising trees as available
<i>Gymnocladus dioicus</i>	

Deferred Use — Population along streets within city adequate for the period.

<i>Acer saccharinum</i>	<i>Pistacia chinensis</i> , seedlings
<i>Acacia</i> spp.	<i>Platanus</i> spp.
<i>Carya illinoensis</i>	<i>Populus</i> spp.
<i>Catalpa</i> spp.	<i>Pterocarya stenoptera</i>
<i>Celtis occidentalis</i>	<i>Robinia pseudoacacia</i>
<i>Crataegus oxycantha</i> , all selections	<i>Salix</i> spp.
<i>Evodia</i> spp.	<i>Schinus molle</i>
<i>Fraxinus velutina</i>	<i>Schinus terebinthifolius</i>
<i>Fraxinus velutina</i> 'Modesto'	<i>Tilia americana</i>
<i>Grevillea robusta</i> (evg.)	<i>Tilia platyphyllos</i>
<i>Jacaranda acutifolia</i>	<i>Ulmus</i> spp.
<i>Juglans</i> spp.	<i>Pittosporum</i> spp.
<i>Melia azedarach</i>	
