

Street Tree Ordinances

Characteristics and Planting Areas

Buck Abbey, ASLA

The Robert Reich
School of Landscape Architecture
Green Laws Research Project
Louisiana State University

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The Louisiana urban forest consists of three types of tree plantings.

The largest percentage by quantity and extent are found on undeveloped lands and consist primarily of long lived ‘native trees and shrubs’ that are well adapted to local growing conditions. These plantings are commonly layered and randomly mixed in terms of size, soil conditions, sun-shade preference and longevity. Native trees generally become the tree canopy of any city due to their tall size, dominance and ability to seek out ideal growing conditions. Unwanted plants, or aggressive exotic plants, often invade these native tree plantings. ‘Invasive trees’ such as Chinese

Tallow, Chinaberry, Paper Mulberry, Silk Tree, Tree of Heaven, and Chinese Parasol thrive so well under the same conditions they can push native plants out of the way.

The second largest group of plants in the urban setting consists of horticulturally improved trees and shrubs found commonly on disturbed soils within gardens, parks and institutions. In these locations are found more variety in species, types and sizes of plant. Most of these ‘garden variety’ plants have been bred for their unique flowers, fruits structure, color and ease of growing without serious maintenance. The horticulture trade is dominated by improved plants, both native and exotic. Many if not all of these plantings have been designed, or at least planted where someone wanted them to grow. These trees are almost always planted in contrived arrangements of color, form, texture size or other important characteristic. Design is important in the arrangement of trees within gardens.

Less common, and the third group of urban forest plantings are ‘street trees.’ Street trees are often planted as a result of

a community landscape law that allows or requires that street trees be planted at the edge of a street right of way or within an interior median. Of all of three types of urban forest trees mentioned here, those planted along streets must be able to grow in the most difficult situation with the least amount of care or maintenance. Like trees on developed land, street tree plantings are almost always designed.

Street trees are often thought of as ‘specimen trees’ that are planted along commercial corridors, neighborhood collector streets and on city parkways. Street trees serve several purposes in the urban environment. Street trees give identity, image and context to a place. They also provide environmental services such as making shade, soaking up storm water, filtering the air and cooling hot pavements. But perhaps the most important reason to plant street trees is to build an urban forest through design that will respect or amplify the native landscape of the city. Street trees should be used in a designed way to thread

though the community fingers of the native landscape that lies beyond the city limits sign. A designed system of street trees brings nature into the city and reminds all citizens, shop keepers and travelers that nature is an important part of urban living. The use of native street trees is preferred, exotics should be limited and invasive trees should be banned. Urban environments are more livable if trees, shrubs and ground covers soften the harshness of buildings, roadways, utility systems, signage, fences, trash and storage systems all of which are the common elements of the city. Beautiful cities are known by their urban forest and street trees are a major part of adding that beauty.

Design With Trees

Many designers believe that street trees are best planted in formal rows spaced at regular intervals. They are often planted in straight lines, parallel or staggered to each other giving an effect of a green, flowering or fruiting tunnel. This is a planting design method gifted to the future from the Roman road builders of 321 B.C. The Appian Way or Via Appia which connected Rome with Naples was an

ancient highway planted and decorated for armies on the move. We think of the grand European manner of formal street tree plantings as seen in Washington D.C. Philadelphia, Paris and Luxembourg. This type of uniform tree spacing speaks of the age when formality of kings ruled civic design.

But formal planting is a contemporary streetscape design myth that can be easily be discredited.

Years ago it was not uncommon to see entire streets planted with the same tree. Communities have found that monocultural planting is not the best urban arboricultural practice. American elms (*Ulmus Americana*) once graced many of the streets of New England only to be devastated by an insect borne blight. Similar lessons have been learned by communities who relied upon pears, chestnuts and palms. Today, street trees are best planted with informal compositions that use various combinations of plants composed in informal patterns that meet the challenging conditions of streets. Variation in age, height, head form,

branching character, leaf quality, and structure make a better designed street. Unified plantings of similar trees are just not as visually interesting or environmentally sound as are those that are planted with several species of trees.

Informal designs may use several types and sizes of trees blending them in skillful compositions of color, texture or seasonal effect. This type of planting will often use ten to twenty street trees of one species followed by ten or twenty of another species. At certain points, other trees may be installed to be street accents. This works well at intersections, entries and special points of interest.

Another myth about street trees is that they must be planted as specimens.

Streetscape Trees

Single specimens certainly are desirable to give a sense of street scale and rhythm but some of the best street tree

plantings are when trees are grouped or planted with other design elements. Planting groves of trees or preserving existing trees rather than specimens gives a greater visual and emotional impact to a street. Combining groves with different kinds of plants and streetscape design elements in irregular patterns and will work better if the geometry of the street is variable and planting spaces are not uniform. This is the common character of a street and a few large groves of native trees along the way better blends the natural country side to the city.

Preserving perpendicular hedges or fencerows along streets provide tremendous streetscape impact by allowing the effects of trees near the street to trail off into the distance along property lines. Water way crossings on public streets near bridge abutments bring stands of trees close to the public street. Woodlands, parklands or public properties fronting streets can also provide massed plantings of street trees. The impact of preserved woodland along the edge of a street, even if it is only an acre or so, changes the character of the driving, biking or walking experience.

Preserved patches of nature within or near the street right-of-way can provide a rich image of place, a regional context and green character to any streetscape. Large public properties, institutions and large land owners who preserve trees, plant shrubs and landscape their properties along the street frontage add important green to the fabric of a street. They may be rewarded through public policy for preserving their groves of street side trees.

Streetscape plantings may take advantage of plantings on private property as a result of community landscape codes.

Many cities adopt landscape codes that require land developers to install a street edge planting to act as a street buffer. The buffers are on public land, private land or a combination of both. These buffers vary in width but are often five (5) to thirty (30) feet in depth and are planted with a proscribed number of trees spaced anywhere from twenty (20) feet to sixty (60) feet on center in a formal pattern or in an irregular pattern. Charlotte North Carolina for instance requires tree plantings for single family

developments, suburban commercial zones and urban zones. Planting strips will vary from a minimum six (6) feet to eight feet to what ever size planting strip is available. Within these ‘street tree planting areas,’ trees are planted thirty (30) to forty (40) on center.

Many landscape codes provide ‘tree credits’ toward these planting requirements if existing trees are preserved and maintained. Cities such as Chapel Hill, North Carolina, Mandeville, Louisiana and The Woodlands, Texas have such code requirements. Plantings on private property, when combined with plantings within the public right-of-way, give the green leafy streetscape effect that cities desire.

Landscape codes also work to green streets by requiring parking lots to be landscaped and screened from view. These plantings are required for screening, shading and dividing parking bays into a small less obtrusive pattern of paving. Cities like Little Rock, Arkansas, Sacramento, California and Austin, Texas have good parking lot

planting requirements for vehicular use areas that front public streets.

Some communities zone certain districts to not allow parking along property frontage. They require instead that parking lots, auto service bays and loading docks be placed to the rear. This allows for the space between the building and the street to be landscaped with street trees. Baton Rouge, Louisiana uses such a streetscape improvement technique in their landscape code for special use districts. Parking lots, more than buildings, public utilities or signage clutter the view of the street. Strip shopping centers with street side parking detract from the visual quality of a community by making streets less green. Communities that require that parking be placed behind building have greener streets.

Street Tree Planting Areas

Trees with special qualities or remarkable character are often planted in highly complex spaces along the edge of

the street right-of-way. The space used to plant street trees is called the 'street tree planting area' and is usually a narrow strip of land between the street and the edge of the right-of-way. This size of this space generally will be based upon the speed and volume capacity of the road. Within this limited area are found public utilities, street signage, drainage structures, utility connections and other features that compete for the same space. These tree planting spaces can be highly variable and very irregular so street trees must be selected that can grow well in restricted spaces, poor soils, and almost desert like conditions. The shape and form of street trees must be carefully chosen to not obstruct vision, impede traffic or interfere with pedestrians or bikers. Single trunk trees branched up to eight feet often work best along streets. In addition, successful street trees must be able to put up with traffic pollution, excessive heat and dryness and assault by maintenance contractors, vandals, urban dogs and poor drivers. Messy fruit, tree litter and pollen are not desirable characteristics of street trees so trees that litter are not the best to use. Trees that grow fast, are weak wooded and brittle are not good street trees either.

If they break apart in ice storms or are overturned in high wind, they present a public liability and clean up problem for those charged with public tree care.

But what are the right characteristics for a desirable street tree? This is the vexing question facing every landscape architect, arborist, tree company specification writer and public tree manager in the United States. Not all trees are good street trees. What characteristics make for a good city street tree?

The Ideal Street Tree

Some interesting insights about street tree characteristics were quickly inventoried by a brief survey question to members of the urbNRnet list server. Members of this communication network consists of various people in the street tree business from across the country. They subscribe to this on line discussion group in order to undertake group problem solving exercises that bring various opinions to light in order to allow for expanded thinking about a

subject of interest. Most of the people are engaged in tree related professions include municipal arborists, tree administrators, tree consultants, landscape architects, urban foresters, utility arborist, natural resource scientists, university professors, and researchers all of which have a strong interest in street trees or some aspect of tree work.

To try to determine the best characteristics of a street tree, members of the list serve were asked to respond to the following question. "What would you consider the most important characteristic for a street tree? They were not asked to name specific trees or give exact responses to known species of plants. The survey was only interested in what makes a good street tree. Responses received were, inventoried, organized, analyzed and resulted in the list of desirable characteristics and the least desirable characteristics of street trees that could be used in American communities.

The side bar display which follows indicates the ten best characteristics and the five least desirable qualities of street

trees uncovered by our survey. The best street tree are native plants that convey regional design expression and provide environmental services through seasonal change. Great street trees fit in with utilities, signage and urban structures and are of medium size with small root systems. They have compact heads, single trunks and fine texture and prefer to grow in full sun. Good street trees require no routine maintenance, are insect and disease free, have little if any public liability problems.

The hard part of streetscape design is finding the perfect street tree to match these characteristics.

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The urbNRnet list server is sponsored by Treelink.org, a web site serving the needs of the tree industry, designed and edited by Pepper Provanzano. TreeLink is ‘the’ source for information and connections to all aspects of urban forestry.

SideBar A

Desirable Characteristics (indicator plant)

- 1. Significant Regional Expression** (Live Oak)
Expressive design qualities, sense of place, common to the landscape of its region, cultural significance
- 2. Native Plant Providing Environmental Services** (Bald Cypress)
Hardy, drought resistant, wildlife supportive, long lived, cleaning air, providing shade, reducing heat, screening, sound control, urban pollution resistant, adds economic value.
- 3. Seasonal Interest,** (Common Pear)
Annual, diurnal and seasonal, spring, summer, autumn and winter, fruit, flower, bark, branching, fall color, leaf color texture, wind sensitive.
- 4. Proper Size For Planting Location,** (Hybrid Foster Holly)
Root ball, head spread, verticality, height, and able to clear lines, utilities and structures, right tree-right place. The most desirable size would be those species such as *Lagerstromia Indica* (Crape Myrtle) that come in several sizes such as dwarf, small, medium and tall trees.

- 5. Single Stem Rugged Bark** (Winged Elm)
Twelve foot (12) foot clear trunk, slim head form, damage resistant, pedestrian and traffic clearance.
- 6. Fine Texture** (Crape Myrtle)
Allowing sunlight below, nearly persistent leaves, wind resistant, ice resistant when leaves fall they are small and blow away in the wind.
- 7. Small Root System,** (Cabbage Palm)
Compact, non aggressive, chemical free, adaptable to variable soils, transplants easily, travels well.
- 8. Insect and Disease Resistant** (Drummond Red Maple)
Able to withstand systemic assault by insects, fungi, pathogens and agents of destruction found in a hostile environment.
- 9. Minimal Maintenance** (Green Ash)
Pruning, watering, fertilization, insect management, irrigation, leaf and twig cleanup minimal or not needed.
- 10. No Liability** (Florida Dogwood, Oriental Magnolia)
Tree able to withstand storms, mechanical damage and other structural attack without breaking up, overturning, snapping, twisting and dropping trunk and branches on to cars, people or private property.

Side Bar B

Least Desirable Characteristics

- 1. Unable to survive urban conditions.** (Parsley Hawthorn, Silverbell)
Does not do well in difficult urban planting conditions, short lived, venerable to urban stress, poor soils and moisture conditions.
 - 2. Short lived.** (Bradford Pear)
Fast growing, weak wooded, need to be replaced soon.
 - 3. High maintenance.** (American Sycamore)
Frequent pruning, fertilization, irrigation and insect control needed to insure survival of the tree.
 - 4. No environmental, design or social value.** (Chinese Tallow Tree)
Lacking strong design significance, invasive does not modify its environment, just an icon of nature in the city.
 - 5. Poor Personal Habits.** (Tree Ligustrum)
Messy fruit, ill smelling flowers, litter, weak wooded fast growth, armed, aggressive, non-native, not attractive to wildlife.
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