



## A Resource List

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### ACT WEBCAST SERIES

The ACT Webcast Series is a webcast held at the lunch hour on Thursdays, and is made possible through support from The Home Depot Foundation and USDA Forest Service. The goal is to provide training opportunities for local urban and community forestry practitioners. The trainings highlight successful programs and practices that you may want to adapt in your communities. Webcasts are open to all.

Correctly planting and protecting trees is a good thing to do. However, planting and protecting trees also requires coordinating time and resources. ACT minimizes such requirements by sharing the innovative ideas and organized approaches of successful projects and models for members to replicate. We invite you to join the Alliance for Community Trees for more ways to get involved. Together, we create a strong voice on behalf of the urban forest and make a great difference in the health, beauty, and livability of our communities. We strengthen communities by offering action-oriented approaches that bring people together around a common purpose.

### TOPIC

As urban areas expand, communities want to preserve open lands and environmentally sensitive areas and mitigate environmental problems related to development. Often a tree ordinance is a key aspect of the framework for managing community forest and, in general, public resources. It provides legal authority for defining municipal responsibility for public and private trees, conducting forestry programs, passing regulations, and setting minimum standards for management. The intersection of nonprofit community leaders, government agencies, and experienced land-use professionals is where effective tree ordinances, land preservation strategies, and environmental mitigation plans often begin to help ensure that their communities develop sustainably.

### TRAINERS

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#### *Craig Richardson*

Craig is a planner, lawyer, and Vice President of Clarion. He is Director of the firm's North Carolina office. Mr. Richardson has consulted with over 100 local government clients in a number of states throughout the country on the preparation of development codes, growth management strategies, adequate public facility regulations, impact fees, and tree protection and landscape regulations. He has a strong record of success in leading code revision projects, growth management strategies, and other plan implementation efforts. He is a frequent speaker at planning conferences and has written on a number of plan implementation issues. He serves on the faculty for APA's national Zoning Clinic.

#### *Chad Meadows*

Chad is a Senior Associate in Clarion's Chapel Hill Office. He is a planner with over ten years of experience in public and private sector planning. He has worked on a diverse array of projects in his career at Clarion, including: land development codes, subdivision standards, design standards and guidelines, and comprehensive and growth management plans. Prior to joining Clarion Associates, Mr. Meadows oversaw the Land Development Ordinance Update in Cary, NC, and worked as a Senior Planner on Growth management issues in the Florida Keys and in the telecommunications industry. Chad holds a master's degree in urban and regional planning from Portland State University and a bachelor's degree in geography from the University of North Carolina, Greensboro. Chad is a member of the American Institute of Certified Planners.





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### ABOUT TREE ORDINANCES

The word “ordinance” is not always popular. Tree ordinances, however, are meant to help build healthy and sustainable community forests. Tree ordinances, through legal provisions adopted by the local or county government, generally define how to manage and care for public and privately owned designated trees, including the removal or pruning of residential trees. They provide authority, define responsibility, offer guidance to residents, and establish minimum standards for a community’s tree program. Often, ‘designated trees’ covers *heritage/large trees*, *species-specific trees*, and *historical trees*. Less common are ordinances that also protect infrastructure within the dripline, but, since root damage spells certain death for a tree, this is an absolute necessity.

Many communities adopt tree ordinances when citizens perceive an immediate need to protect trees. Increased development activity, loss of street trees, natural disasters, or removal of historic or landmark trees are typical events which often increase awareness about the benefits of trees and lead to the development of tree protection ordinances. Even though each community has its own conservation needs and reasons for writing or revising a tree ordinance, a natural tendency is to quickly adopt another community’s ordinance as a model with the idea of fixing it later. Jump-starting the tree ordinance development process by cloning an existing ordinance is seldom reflective of one’s own community needs. In some situations, this can even lengthen the tree ordinance development process.

We also don’t advocate for proactively writing a tree ordinance, because it can be a contentious and labor-intensive process and result in something that is more restrictive than if the applicable parties had worked out a reasonable solution beforehand. However, once you find yourself needing a tree ordinance, you should know that the process can take months or years to accomplish. And remember that there is no substitute for community interaction and a patient, thorough approach.

Done correctly, tree ordinances are about many things other than simply “protection.” They can help a community achieve specific goals such as job attraction, higher-density development patterns, increased small business revenue, and offering quality-of-life amenities provided by parks, recreation, and open space. Tree ordinances reflect the values of a community. A tree ordinance encourages tree planting and tree maintenance to secure the beautification, air-cooling and purification, noise abatement, property value enhancement, wildlife habitat, and the public health and safety benefits trees provide.

The good news is that whether a community is large or small, rural or urban, in a natural forest or in the desert, the basic process for developing a tree ordinance is the same. First, a community needs to determine what it has to work with and what it hopes to achieve. Second, it must formulate and execute plans to get what it wants. Finally, they evaluate whether the tree ordinance is achieving its desired ends. Development of a tree ordinance will be most effective when both citizen groups and local governments work together. Some communities have found that forming a task force is an excellent way of ensuring cooperation between groups with diverse interests.

Here are some general recommendations to consider with your tree ordinance:





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### Ordinance Recommendations

A special permit is required to remove any tree- public or private- if the tree falls into any of the following three classifications. In each case, the tree shall be evaluated by a consulting arborist to confirm its status and determine the critical area root zone (which shall not be less than the dripline). For any above-ground or below-ground development projects happening within 100 feet of the critical area root zone of an ordinance protected tree, the area of soil within 16 square feet of the critical area root zone must remain unpaved, open to the air, and free of toxic chemicals. When a special permit is issued for the removal of a protected tree, one or more of equal or greater value- as determined by the state urban forest council and City Board of Supervisors shall be installed.

1. Heritage/Large Tree: larger than 6" caliper, 20-foot height, or 15-foot-wide canopy.
2. Historic/Landmark Tree: Landmark trees can be nominated by their property owners, city agencies, or supervisors. Designation requires an evaluation by a certified arborist, review by the state urban forest council, and final determination by the City Board of Supervisors (or applicable agency).
3. Species-Specific Tree:

We'll get into specific categories of ordinances in more detail, but here are some general recommendations for incorporating into all ordinances:

- That all construction include a plan for how development factors will influence the condition existing trees, how trees will be selected and installed based on appropriate International Society for Arboriculture (ISA) design guidelines, American Nursery and Landscape Association plant material standards, and other industry guidelines.
- Submit a landscaping plan detailing how existing and replacement green infrastructure will handle stormwater, impact the heat island, and mitigate erosion, as well as how green infrastructure will be adequate maintained and paid for.
- Set protective measures for trees to be preserved including: size of protective zone around each tree, demarcation and fencing of protective zone, and visibility of protective zone
- Create a Tree Mitigation Fund that is funded by fines levied for illegal tree removals or by developers who choose to pay into the fund as opposed to replanting trees removed. There should be a corresponding rate chart that sets general values of trees dependent on their size and location and benefits including energy, air quality, stormwater, aesthetic, and other. Heritage, large, and historic trees may have especially high intangible value.
- Developers should be provided the option of paying into a Tree Mitigation Fund or replacing trees removed. When replacing trees, the total caliper must remain equal or greater, and a different size caliper tree may be substituted up to 75% of the size at removal.

### Urban Forest Management Plan

For public right-of-way street trees (including trees on land that is privately owned but accessible by the public), the city shall designate the numbers and types of trees to be planted, as well as guidelines on tree selection, installation, maintenance, and replacement. All activities should be properly budgeted so as to lengthen a street tree's life and minimize problems with pavement, electrical wires, and buildings. Trees shall be planted along both sides of the street,





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with one tree every 50 to 100 feet with planting strips at least 5 feet wide. The selected trees must eventually be capable of reaching a minimum height of 40 feet and a crown spread of 30 feet.

There should be set standards for street tree distance from utility lines, power poles, driveways, street lights, other existing trees, and street intersections. A workable solution should be uniquely developed for places where existing pavement, electrical/telephone wires, and buildings prevent these guidelines from being met. In cases where utility lines do not already exist, they should be placed underground.

### **Design Standards & Urban Forest Policies**

- Prevent a net loss of trees. Where possible, aim to increase trees proportional to population growth.
- Provide good quality soil and generous landscaped areas. Some of the goals include to enhance pedestrian and cycling infrastructure, encourage compact land use patterns, and promote general beautification.
- Prioritize the preservation of established trees over replacements.
- Maintain at least two shade trees for every 5,000 square feet of site and one shade tree per 600 square feet of street frontage.
- Protect the critical area root zone above and below ground to prevent root damage. At minimum, prohibit certain activities such as trenching or grading within the dripline of trees unless precautions are followed. Mark trees designated for protection with site fencing or other means. Prevent soil compaction by prohibiting construction materials from being placed on the ground within the dripline.

### **Enforcement**

Communities can regulate the urban forest through a variety of legislation. However, like any legislative matter, effectiveness depends on how well defined the process is for exceptions and handling new circumstances, as well as the appropriate enforcement agency having regulatory authority.

Businesses, developers, contractors, and individuals who violate the codes by causing tree damage- from outright tree loss to broken branches or root damage- should be penalized with fines. When any trees must be removed, contributions to the city's tree fund shall or an applicable tree planting organization should be levied to offset their replacements. Fines should consider what the fair market value of the trees would have been under the tree ordinances.

The City Arborist should make decisions regarding day-to-day implementation of the ordinance with a goal of the existing trees being preserved to the maximum extent reasonable and feasible. The city shall set a reasonable fee rate for consulting arborist services. While this may generate income for the city, permit seekers may hire a private arborist on their own to expedite the process. Decisions may be appealed to the Tree Conservation Commission. If these positions and bodies don't exist, the ordinance should specify that they be created.

The City Arborist shall be permitted to inspect construction sites and intervene when necessary with the same kind of regulatory authority as an overseeing engineer. This includes immediate action such as the ability to halt development activity if it is found to be in noncompliance with tree protection requirements, and ranges to more severe measures such as a lean against the development and the seizure of project bonds for willingly neglectful failure to comply with tree requirements.



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Finally, while most legislation has been created and amended over time at the local level, be aware that federal and state regulations and laws may supersede local laws as well as dictate the local community's ability to control and manage trees on public and private properties.

### Ordinance Categories

Ordinances come in many different sizes, shapes, and colors. Ideally, a tree ordinance would apply to all trees in that given jurisdiction, but, unfortunately, that's not how they work. Some ordinances apply only to street trees, while others apply to all public and privately owned trees. Some pertain only to the immediate community, while others recognize the impact of surrounding areas. And just because trees are protected during new construction doesn't mean that they're protected during rehabilitation. Go figure. Now you can see why establishing a good ordinance is so difficult.

Here are some of the many places where tree ordinances reside, annotated with recommended best practices:

Ordinance	Municipal Code(s)	Recommendations
Residential Construction (new and rehabilitations)	Subdivision or Development Land Use Land Development Construction	<ul style="list-style-type: none"> <li>• During the site design and planning process, an arborist must meet with and advise city engineers and planners.</li> <li>• The final development shall have at least 1 tree for every 30-linear feet of street front and at least 7 trees per acre.</li> <li>• The total footprint of the development be at least 50% shaded or pervious greenspace.</li> </ul>
Commercial Construction (new and rehabilitations)	Subdivision or Development Land Use Land Development	<ul style="list-style-type: none"> <li>• During the site design and planning process, an arborist must meet with and advise city engineers and planners.</li> <li>• The final development shall have at least 1 tree for every 30-linear feet of street front and at least 7 trees per acre.</li> <li>• The total footprint of the development be at least 50% shaded or pervious greenspace. For commercial development, this often translates into buildings having a greenroof.</li> </ul>
Wetlands, Water, or Hurricane Preparation	Environmental Protection Land Use Irrigation Use Water Conservation Scenic Waterways & Rivers	<ul style="list-style-type: none"> <li>• Protection based on the percentage of a site.</li> <li>• Protection based on achieving at least a certain point value, where larger, more mature trees earn more points.</li> <li>• Preserve all trees within the 100-year floodplain.</li> <li>• Manage a given percentage of stormwater onsite.</li> </ul>
Open Space or Habitat Preservation	Parks and Recreation Environmental Protection Historic Preservation	<ul style="list-style-type: none"> <li>• Promote the conservation of contiguous open spaces.</li> </ul>
Parking Lots	Land Development Land Use	<ul style="list-style-type: none"> <li>• The total footprint of paved surfaces should be at least 50% shaded or pervious greenspace within 15 years of development. The intention is to create tree-lined parking lots interspersed with open greenspaces.</li> <li>• The final development shall have whichever is greater of: at least 1 shade tree for every 40-linear feet of paved surface OR 1 shade tree per every 15 parking spaces for</li> </ul>





**ACT Webcast Series**  
*Tree Ordinances and Design Standards*

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		a lot with less than 25 spaces, 1 shade tree per every 12 parking spaces for a lot with 25-100 spaces, and 1 shade tree per every 10 parking spaces for a lot more than 100 spaces. For example, a 10,000-square-foot site with 600 square feet of storefront and 150 parking spaces would require 20 shade trees.
Street Trees	Subdivision & Landscaping Street and Sidewalk Use Transportation Zoning	<ul style="list-style-type: none"> <li>• Establish a minimum 50% canopy coverage or 1 shade tree for every 40-linear feet of paved surface.</li> <li>• Protect trees in a 5-mile buffer zone outside city limits known as the extraterritorial jurisdiction.</li> <li>• The total footprint of paved surfaces should be at least 50% shaded or pervious greenspace within 15 years of development. The intention is to create tree-lined streets and sidewalks interspersed with open greenspaces.</li> </ul>
Affordable Housing	Community/Neighborhood Development	<ul style="list-style-type: none"> <li>• Establish a program to retrofit entire middle and low-income neighborhoods as demonstration projects of integrated planning for green community benefits, encompassing both built environment and green infrastructure.</li> <li>• All HOPE VI projects should meet Sustainable Sites standards and set incremental and annual goals for green infrastructure.</li> <li>• Expand criteria under the Community Reinvestment Act (CRA) to encourage investments in green community redevelopment efforts. Integrated neighborhood planning and landscaping for energy conservation as well as efforts that promote the creation of green collar jobs should all receive specific and additional credits in compliance with the CRA.</li> <li>• Make specific and strategic energy efficient and property value landscape upgrades eligible uses for CDBG and HOME funds.</li> </ul>
Roadways- new and improvement projects	Street and Sidewalk Use Land Development Transportation	<ul style="list-style-type: none"> <li>• Establish a minimum 50% canopy coverage or 1 shade tree for every 40-linear feet of paved surface.</li> <li>• Protect trees in a 5-mile buffer zone outside city limits known as the extraterritorial jurisdiction.</li> <li>• The total footprint of paved surfaces should be at least 50% shaded or pervious greenspace within 15 years of development. The intention is to create tree-lined streets and sidewalks interspersed with open greenspaces.</li> </ul>
Landscape Design and Maintenance	Land Development Land Use	
Urban Heat Island		<ul style="list-style-type: none"> <li>• Integrate into energy, air quality, water, and sustainability efforts.</li> <li>• Install greenroofs on all government buildings</li> </ul>
Brownfields		





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SUCCESS STORIES: *TREE PROTECTION (and Natural Areas)*

### **Atlanta, GA**

Atlanta's tree protection ordinance sets out strict rules limiting the removal of trees, protecting trees during construction, and specifying when new trees must be planted. The ultimate goal of the ordinance is to prevent a net loss of trees in the city, and to protect "mature" trees. In particular, a permit is required before any tree with a diameter larger than 6" can be removed. In many cases, new trees must be planted to replace those that have been cut down. The City Arborist makes decisions regarding day-to-day implementation of the ordinance, and those decisions may be appealed to the Tree Conservation Commission. The ordinance requires that at least 16 square feet of soil around the tree must remain unpaved and open to the air. Toxic chemicals also must be kept away from the trees. More information at: [www.treesatlanta.org/TreeOrdinances.aspx](http://www.treesatlanta.org/TreeOrdinances.aspx)

### **Chapel Hill, NC**

Recently proposed changes to Chapel Hill's Tree Protection Ordinance would establish a new vision statement that calls for no net loss of trees/canopy cover and an increase in trees proportional to population growth. Regulations propose a permitting process for tree removal on private property, including residential. The first step of the phased proposal requires a permit to remove trees in a cumulative area of more than 5,000 square feet. Changes are also proposed to lower the threshold size of trees that must be surveyed. The ordinance revision is linked to a Townwide commitment to sustainability with the potential to reduce carbon emissions and decrease the urban heat island effect. More information at: [www.ci.chapel-hill.nc.us/index.aspx?page=879](http://www.ci.chapel-hill.nc.us/index.aspx?page=879)

### **Columbus, OH**

After realizing that earlier, weaker codes simply were not producing adequate enforcement, the City of Columbus took to heart the notion that local tree ordinances could be incorporated into the development code, so as to force the issue of relating tree protection directly to development activity. That way tree protection is not seen as an isolated activity or ignored by developers and building and zoning officials. Columbus provides badges for tree enforcement personnel, who are authorized to visit development sites and halt development activity if they find noncompliance with tree protection requirements. The ordinance spells out specific tree density requirements for various types of development. Arborists are also incorporated into the planning process so that they can discuss tree protection needs directly with city engineers and planners. More information at: [http://actrees.org/site/news/newsroom/branching\\_out-\\_cities\\_are\\_learning\\_the\\_many\\_b.php](http://actrees.org/site/news/newsroom/branching_out-_cities_are_learning_the_many_b.php)

### **Annapolis, MD**

The City of Annapolis laws recognize the environmental value of trees and protect them during construction. The tree protection ordinance, under "Trees in Development Areas" Chapter 17.09 of the City Code, requires a survey of trees on a proposed development site and fences or other means to mark and protect designated trees during construction. There are also sections on the protection of trees before and after construction. The ordinance also prohibits certain activities, such as trenching or grading, within the dripline of trees, unless specific precautions are followed. More information at: <http://library.municode.com/index.aspx?clientId=16754&stateId=20&stateName=Maryland>

### **Austin, TX**

The City of Austin Tree and Natural Area Preservation code is based on the fundamental precepts of sound urban forest management. These precepts establish a diversification of species, with a mix of young, medium aged, and mature trees. Proposed development projects are evaluated on a case-by-case (and tree-by-tree) basis. The goal of each review is to assure that, through a combination of preservation and reforestation, a final product is achieved which results in a diversified and sustainable urban forest. Trees that measure greater than 8 inches in diameter are scrutinized for preservation potential. Trees greater than 19 inches in diameter are classified as "protected size" and receive enhanced preservation evaluation. City code requires that proposed developments demonstrate that trees are preserved to the





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maximum extent reasonable and feasible. Tree preservation is effectively defined as root system preservation, a Critical Root Zone Area (CRZ) is assigned to each tree, based on trunk diameter size. A minimum of 50% of the CRZ is required to be left undisturbed to achieve minimal conformance with the regulations.

More information at: [www.ci.austin.tx.us/trees/preserve\\_code.htm](http://www.ci.austin.tx.us/trees/preserve_code.htm)

### **Parker, CO**

#### *Natural Area Protection and Parks/Open Space Ordinances*

The Town of Parker, a fast-growing community located in Douglas County, enlisted Clarion Associates in early 2001 to draft high-priority revisions to its development code's environmental protection standards. Clarion and town staff quickly and efficiently shepherded three complex and far-reaching natural areas ordinances through the drafting and adoption process, resulting in unanimous adoption by the Parker Town Council six months after initiating the project. The new ordinances covered significant new ground for Parker: (1) Critical Waterways protection; (2) Hillside Area protections; and (3) Park Land Dedication and Common Open Space (including a clustering option). The fast-track process included several meetings with key homebuilding and other stakeholders to review drafts, and three public adoption hearings.

### **Portland, OR**

In 2009 the City of Portland began working on a major revision of its Tree Code. The proposed updates to the City's tree regulations include a consolidated Trees code title, just as there are city code titles for fire, zoning, parks and recreation, vehicles and traffic, etc. The proposal also would create a 24-hour tree hotline as a single point of contact for the public, a Community Tree manual, and a standardized tree removal permit system that would require a permit to remove trees 12 inches in diameter or larger on all lots. There would be no single family lot exemption for this permitting, and new flexible development standards and stronger tree preservation requirements in land use reviews would be instituted. The proposal also includes provisions for new tree preservation and tree density standards to be applied through building permits, as well as recommendations for improved inspections and enforcement. The many municipal stakeholders who worked together on discussing the issues include the City Bureaus of Planning and Sustainability, Parks and Recreation/Urban Forestry, Development Services, Environmental Services, Transportation/Maintenance, and Water. Among the other participants were the Urban Forestry Commission, Neighborhood Associations, Home Builders Association, Friends of Trees, Audubon Society of Portland, Portland State University Department of Geography, Consulting Arborists, Institutional Representatives, Columbia Corridor Association, Multnomah County Drainage District.

More information at: [www.portlandonline.com/bps/treeproject](http://www.portlandonline.com/bps/treeproject)

### **Wilmington, DE**

In cooperation with the City of Wilmington, the Delaware Center for Horticulture is close to passing a revised tree ordinance that is more comprehensive than what is currently in place. The new ordinance enables a Tree Commission to deal with tree permitting and enforcement appeals, as well as provides an advisory role to the Department of Public Works new proposed Urban Forest Administrator. The ordinance also calls for more proactive management of the urban forest, including regular inventory updates, storm damage assessment, diversity goals, a tree canopy goal, and more.







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### SUCCESS STORIES: *STREET TREES*

#### **Seattle, WA**

Seattle requires a street use permit before landscaping in a planting strip in a public right-of-way. For street trees, the strip must be at least 5 feet wide, unless specific approval from the city's arborist is received. Five feet is generally recommended as the minimum width for planting most trees. The City also sets standards for street tree distance from utility lines, power poles, driveways, street lights, other existing trees, and street intersections. A guide is available to help property owners select and plant trees in accordance with the city's requirements.

More information at: [www.seattle.gov/transportation/treepanting.htm](http://www.seattle.gov/transportation/treepanting.htm)

#### **Madison, WI**

After public outrage in response to contractor-caused street tree damage on Spaight Street, the City of Madison is drafting new rules requiring the protection of trees during construction. Beyond just setting standards, the preservation specifications will have teeth: contractors will face fines for violations. Known as "contractor specifications," the new rules will be boilerplate requirements given to any contractor hired to perform city street construction work. Foresters will participate early in the construction planning process, and will be able to inspect construction sites and intervene when necessary with the same kind of regulatory authority as an overseeing engineer. The new rules also aim to prevent soil compaction by prohibiting construction materials from being placed on the ground. Contractors who violate the new codes by causing tree damage—from outright tree loss to broken branches or root damage—will be penalized with fines. The City of Madison Engineering and Parks Divisions collaborated on drafting the tree preservation specifications.

More information at: [http://actrees.org/site/news/newsroom/madisonians\\_anxious\\_about\\_damage\\_to\\_trees\\_fro.php](http://actrees.org/site/news/newsroom/madisonians_anxious_about_damage_to_trees_fro.php)

#### **Orlando, FL**

The City of Orlando's landscape design standards, located within Chapter 60 of the City Code, specify that trees must be planted along both sides of a street, with one tree every 50 to 100 feet. The selected trees must eventually be capable of reaching a minimum height of 40 feet and a crown spread of 30 feet. The city also requires a permit for removal of trees from private property if the tree is larger than 4" DBH. The Tree Code Inspector inspects the tree and a permit is issued if the removal is warranted.

More information at: <http://library.municode.com/index.aspx?clientId=13349&stateId=9&stateName=Florida>

#### **San Francisco, CA**

San Francisco is a tough place to be a tree. So much about the location goes against the trees. The city gets little summer rain and is partly built on sand, and then there's the wind, salt spray, and fog. Most California native trees don't fare well in the city, and exceptions like Monterey pine and Monterey cypress tend not to be good street trees. Despite all, city trees persist with the help of nonprofits like Friends of the Urban Forest and the San Francisco Tree Council. In December 2005, the City Board of Supervisors approved a measure to expand protection to landmark and significant trees, a critical move to help ensure the health and longevity of San Francisco's urban forest. Significant tree status is automatic for trees within 10 feet of a public right-of-way that exceed at least one of three criteria: foot-wide diameter, 20-foot height or 15-foot-wide canopy. For landmark status, candidates can be nominated by their property owners, city agencies or supervisors; certified arborists evaluate them, the Urban Forestry Council reviews them; and the Board of Supervisors has final say.

More information at: [http://actrees.org/site/news/newsroom/the\\_dirt\\_its\\_tough\\_to\\_see\\_urban\\_forest\\_with\\_s.php](http://actrees.org/site/news/newsroom/the_dirt_its_tough_to_see_urban_forest_with_s.php)





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### SUCCESS STORIES: *PARKING LOTS*

Shade provided by trees in parking lots reduces excessive heat buildup, which can adversely affect the local microclimate and air quality. Recognizing this fact, many cities have adopted ordinances that require set amounts of tree planting or shading in parking lots. Parking lot shade ordinances lend themselves readily to retrospective analysis to determine whether the goals of the ordinance are indeed being met.

#### **Sacramento, CA**

Since 1983, an ordinance in Sacramento's zoning code has required that enough trees be planted to shade 50 percent of new, or significantly altered, parking lots after 15 years of tree growth. A 2001 study found that the lots were only achieving about 25 percent shading because sometimes shade was double-counted, trees did not grow to their expected size under the conditions of the lot, or trees were not adequately dispersed. In 2003 Sacramento modified its code, introducing new Parking Lot Tree Shading Design and Maintenance Guidelines to improve the effectiveness of the City's parking lot shading ordinance.

More information at: [http://actrees.org/site/news/newsroom/parking\\_lot\\_tree\\_shading\\_design\\_and\\_maintenan.php](http://actrees.org/site/news/newsroom/parking_lot_tree_shading_design_and_maintenan.php)

#### **Baton Rouge, LA**

In 2007, the city of Baton Rouge strengthened its landscape ordinance, which requires tree planting on all new developments, excluding single-family residences. Part of the city's Unified Development Code, the ordinance requires two shade trees for every 5,000 square feet of site and one shade tree per 600 square feet of street frontage. Parking lot requirements include one shade tree per 15 parking spaces for a lot with one to 25 spaces; one shade tree per 12 parking spaces for a lot with 25 to 100 spaces; and one shade tree per 10 parking spaces for a lot over 100 spaces. For example, a 10,000-square-foot site with 600 square feet of storefront and 150 parking spaces would require 20 shade trees.

More information at: <http://brgov.com/dept/planning/udcodeonline.asp>

#### **Chicago, IL**

Chicago has a landscape ordinance that requires planting trees or shrubs on parkways and landscaping parking lots, loading docks, and other vehicular use areas, both within the sites themselves and to screen their perimeter. The ordinance applies to most new building construction, as well as to repairs, remodeling, and enlargements of a particular size and cost. The Bureau of Forestry, which maintains the standards, must inspect and approve all parkway vegetation prior to planting. The Chicago Department of Zoning reviews all building and zoning permit applications to ensure compliance with the ordinance.

More information at: [http://actrees.org/files/Newsroom/chicago\\_landscaping\\_and\\_screening.pdf](http://actrees.org/files/Newsroom/chicago_landscaping_and_screening.pdf)

#### **Toronto, ON**

In 2007, the City of Toronto instituted its Design Guidelines for 'Greening' Surface Parking Lots to respond to both the urban design and environmental challenges associated with a surface parking lot. The Guidelines are intended to create surface parking lots that are not only efficient, but also safe, attractive, and environmentally responsible. 'Greening' the surface parking lot involves planting trees, providing good quality soil and generous landscaped areas, enhancing pedestrian and cycling infrastructure, managing stormwater on-site, reducing the urban heat island effect, and using sustainable materials and technologies. The guidelines pertaining to trees and landscaping include planting requirements, streetscape screening, perimeter planting, internal planting, shading surfaces, and permeable paving.

More information at: [http://actrees.org/site/news/newsroom/toronto\\_design\\_guidelines\\_for\\_greening\\_surfac.php](http://actrees.org/site/news/newsroom/toronto_design_guidelines_for_greening_surfac.php)





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### SUCCESS STORIES: *LAND USE & DESIGN STANDARDS*

#### **Nashville, TN**

After months of negotiation, in January 2009 the Nashville Metro Council settled on new legislation requiring Nashville's homebuilders to plant a certain number of trees on each open lot. Residential developers would be required to plant one tree for every 30-linear feet of street front and to maintain seven trees per acre. If a homebuilder or developer doesn't comply with the potential new tree requirement, then Metro may seize their bonds for the project. Before the new regulations, the city's tree ordinance encouraged the planting of new trees more than the preservation of established trees, and applied only to commercial developments and not residential projects. For commercial projects, Nashville Codes Department enforces tree density requirements on developers and assesses fines when those requirements are not met.

More information at: [http://actrees.org/site/news/newsroom/new\\_bill\\_will\\_require\\_homebuilders\\_to\\_plant\\_t.php](http://actrees.org/site/news/newsroom/new_bill_will_require_homebuilders_to_plant_t.php)

#### **Carmel, IN**

The City of Carmel and the Carmel Urban Forestry Committee have set a minimum goal of 50% canopy coverage for all streets. The goal is being pursued largely through zoning ordinances that include tree planting requirements for new commercial and residential developments, including parking lot landscaping and project buffering. The City's code enforcement and forestry personnel are also teaming up to inspect and enforce all approved landscape plans, ensuring the city's tree planting requirements are met. All new road improvement projects are planned to be heavily landscaped with trees. In addition, the city is developing public domain graphic planting standards for development submissions that are available for landscape planners, builders, and engineers explaining the proper planting process for a tree (which are required on each landscape plan).

More information at: [www.ci.carmel.in.us/services/DOCS/DOCSUF.htm](http://www.ci.carmel.in.us/services/DOCS/DOCSUF.htm)

#### **Louisville and Jefferson Counties, KY**

##### *Land Development Code*

Clarion Associates was retained to lead a total revision of the joint land development codes for the City of Louisville and Jefferson County. Development challenges facing the county include revitalization of Downtown Louisville and the Ohio River waterfront, preservation of traditional neighborhoods and villages, ensuring better compatibility between new development and adjacent neighborhoods, and preservation of important natural, cultural, and scenic areas including critical mature woodlands. Clarion recommended new development code provisions including: (1) detailed community and site design and development standards, and (2) detailed environmental protection standards generally applicable to all new development, including standards addressing woodland and tree preservation.

#### **Boston, MA**

EarthWorks Boston successfully worked with city officials to change design standards for Boston affordable housing to incorporate trees. Their angle was that having larger trees saves on natural resources because trees establish faster and easier, and also saves on labor costs by allowing for trained volunteer installation where appropriate. The net result is that all affordable housing development in Boston will now incorporate trees (or more trees) into their landscapes. Current Department of Neighborhood Development standards for existing dwellings and new construction mandate the preservation of existing trees and the planting of new ones for stormwater, heat island, erosion, and shade purposes. In some cases the regulations require a minimum 3" caliper size for new trees.

More information at: [http://actrees.org/site/news/newsroom/design\\_construction\\_and\\_open\\_space\\_unit\\_resid.php](http://actrees.org/site/news/newsroom/design_construction_and_open_space_unit_resid.php)

#### **Clayton, MO**

##### *Urban Design District Standards*

Located in the heart of St. Louis, this built-out community has been experiencing high volumes of redevelopment and infill in its existing residential neighborhoods. Although this redevelopment is stimulating the local economy, it also brings significant challenges. Clarion evaluated existing development regulations and drafted development design





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standards for five urban design districts, which addressed building height, architectural style, lot configuration, and tree preservation. Clarion conducted a neighborhood character analysis and tailored standards for each district.

### **Raleigh, NC**

To reflect its goals for sustainability, the City of Raleigh is making changes to its budgeting practices to incorporate current and proposed departmental sustainability initiatives from the adopted budget for 2009-2010. Among the sustainable steps and programs already in place are initiatives that address land-use and development standards. The Department of Development Services implemented substantial changes to the city's residential plan review operations, while Parks and Recreation adopted and enforced land-use policies aimed at reducing sprawl, preserving open space, and promoting sustainable transportation options. Also, the Department of Community Development required three developers, including Habitat for Humanity, to build certain homes at affordable housing projects to Energy Star and higher standards, and other departments are mandating or encouraging LEED Silver level design standards. The City's Proposed Comprehensive Plan Update includes initiatives to encourage compact land use patterns, reduce the negative impacts of low intensity and non-contiguous development, and protect natural resources and promote the conservation of contiguous open spaces.

More information at: [http://actrees.org/site/news/newsroom/raleigh\\_sustainability\\_initiatives.php](http://actrees.org/site/news/newsroom/raleigh_sustainability_initiatives.php)





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### **SUCCESS STORIES: LEGAL CASES**

#### **Jackson, NJ**

In May 2009 the New Jersey Supreme Court upheld the constitutionality of Township of Jackson's tree-removal ordinance, which requires property owners to replace any healthy tree taken down or pay into a fund dedicated to planting trees and shrubs on public property. The unanimous Supreme Court opinion declared the ordinance a valid exercise of the township's lawmaking power. In 2003, Jackson adopted an ordinance to address the adverse environmental effects of tree removal on private property. It requires property owners to obtain a permit for a fee to remove trees. The landowner may replace a tree that is removed with another tree on the same property or pay \$200 into a tree escrow fund to have the township plant a tree on public property. The ordinance does not apply to dead or terminally diseased trees. The ordinance allows for the removal fees to range from \$200 to as high as \$800, based on the size of trees being cleared, but \$200 was the standard charge.

More information at: [http://actrees.org/site/news/newsroom/justices\\_ok\\_tree-clearing\\_fee\\_in\\_jackson.php](http://actrees.org/site/news/newsroom/justices_ok_tree-clearing_fee_in_jackson.php)

#### **San Antonio, TX**

For years, developers tried to ignore San Antonio's tree preservation ordinance on the city's outskirts. All the while, the City Attorney and other officials insisted San Antonio had a right to protect trees in a 5-mile buffer zone outside city limits known as the extraterritorial jurisdiction (ETJ). In May 2009, the 4th Court of Appeals weighed in on the debate and sided with the city. The court knocked down every argument raised by a developer, and stated San Antonio is entitled to enforce the tree rules in the ETJ. "We believe the tree ordinance is more than simply an aesthetic regulation," the opinion stated. "Instead, the tree ordinance was intended to, and does, regulate tree preservation to promote the health of the municipality." The decision applied to an important region for the city, as some of the fastest-growing areas of San Antonio are in the ETJ, where the city can enforce some, but not all, of its ordinances. The city's tree rules mandate that developers preserve some trees and pay mitigation costs for trees they bulldoze.

More information at: [http://actrees.org/site/news/newsroom/tree\\_rules\\_ok\\_in\\_zone\\_outside\\_city\\_limit.php](http://actrees.org/site/news/newsroom/tree_rules_ok_in_zone_outside_city_limit.php)





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### PUBLICATIONS

#### **U.S. Landscape Ordinances, An Annotated Reference Handbook**

*By Buck Abbey*

This state-by-state presentation demystifies the complex planning laws and ordinances that determine landscape design parameters for more than 300 American cities. The author highlights sections of each ordinance that pertain to landscape architecture, boils the legalese down to plain English, explains the law's main purpose and regulatory function, and spells out the practical implications from a design perspective. With the help of more than fifty diagrams and drawings that clarify complex spatial concepts, U.S. Landscape Ordinances reviews the entire spectrum of green laws currently on the books, including ordinances that cover parking lots and vehicular use areas, landscape buffers and screens, street tree plantings, open space design, irrigation, land clearing and building sites, wetlands protection and shoreline development, erosion and drainage mitigation, site design standards, tree preservation, and tree protection. U.S. Landscape Ordinances is a unique and invaluable tool for professionals in landscape design and municipal planning. It also offers a deep reservoir of information for students, municipal legislators, community activists, and anyone interested in understanding or developing a community's landscape ordinances.

More information at: [www.wiley.com/WileyCDA/WileyTitle/productCd-0471292761.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471292761.html)

#### **Nature Friendly Communities**

*By Christopher Duerksen and Cara Synder*

The book's authors point to numerous studies showing that natural resource preservation can help retain jobs, attract new employers, and contribute to strong property values. Their findings document and discuss the job attraction benefits enjoyed by communities offering the quality-of-life amenities provided by parks, recreation and open space; the substantial economic benefits of wildlife tourism; fiscal benefits associated with higher-density development patterns; and the fiscal benefits of preserving undeveloped land.

More information at: [www.clarionassociates.com](http://www.clarionassociates.com)

#### **Tree Ordinance Development Guidebook**

*By the Georgia Forestry Commission*

This guidebook was designed to aid individuals that are interested in revising a current community tree ordinance or developing a new tree ordinance. Sections 2-9 will guide you through forming a tree ordinance working group, getting support, evaluating needs, defining your vision, and preparing the final draft of a tree ordinance. The Tree Board/ Tree Ordinance Evaluation section (10) of this workbook will enable your working group to identify your community's unique situation and current standpoint and help you get started on your tree ordinance. Sections 11 and 12 provide additional resources you may choose to review and use.

More information at: [http://actrees.org/files/Newsroom/georgia\\_tree\\_ordinance.pdf](http://actrees.org/files/Newsroom/georgia_tree_ordinance.pdf)

#### **An Overview of Tree Conservation Ordinances**

*By Christopher J. Duerksen and R. Matthew Goebel*

A premier guide to tree and vegetation conservation, this publication discusses the myriad issues surrounding writing and implementing local ordinances. The writers, an attorney and a planner, discuss conservation techniques and the accompanying legal issues.

More information at: [www.clarionassociates.com](http://www.clarionassociates.com)

#### **Urban Forestry Best Management Practices for Public Works Managers: Ordinances & Regulations**

*By the American Public Works Association Press*

This guide is intended to introduce communities to the myriad of regulatory tools available to assist in the proactive management of the urban forest as well as discuss the primary legislation and regulations that can affect the urban forest.

More information at: <http://actrees.org/files/Research/apwa3.pdf>





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PUBLICATIONS (cont.)

### **Reducing Urban Heat Islands: Compendium of Strategies & Heat Island Reduction Activities**

*By U.S. Environmental Protection Agency, Office of Atmospheric Programs*

In discussing actions to reduce the urban heat island effect, this EPA publication describes a number of tree, land-use, and design ordinances and provides examples of successful policies. The publication describes the causes and impacts of summertime urban heat islands and promotes strategies for lowering temperatures in U.S. communities.

More info at: [http://actrees.org/files/Research/epa\\_uhireduction.pdf](http://actrees.org/files/Research/epa_uhireduction.pdf)

### **Guidelines for Developing and Evaluating Tree Ordinances**

*By Elizabeth A. Bernhardt and Tedmund J. Swiecki*

This guide provides a variety of tools and resources for citizens and local governments interested in developing, revising, or evaluating local tree ordinances. Rather than using a “model ordinance” approach, the resource describes how tree ordinance development can be integrated with an overall community tree management program. The guide includes annotated examples of effective tree ordinance provisions used throughout the country, as well as detailed descriptions of practical methods used to monitor community tree resources, tree management activities, and community attitudes. Part I is about determining whether to develop an ordinance. Part 2 is a guide for drafting an ordinance. Finally, Part 3 is a technical guide for evaluating and monitoring your ordinance.

More information at: [http://actrees.org/files/Newsroom/isa\\_treeord.pdf](http://actrees.org/files/Newsroom/isa_treeord.pdf)

### **Tree Conservation Ordinances: Land-Use Regulations Go Green**

*By Christopher Duerksen and Suzanne Richman.*

This American Planning Association planning advisory report from 1993 addresses a number of issues related to protecting trees through municipal ordinances, including successful strategies and methods. The report stresses the conservation of trees in urban planning, visual and aesthetic values, and health benefits of trees, and contains appendices and visuals. Chapters include “Establishing the Value of Trees,” “Legal Aspects of Tree Conservation,” “Crafting an Effective Tree Conservation Ordinance,” and “The Politics and Practice of Tree Conservation.”

### **Urban Tree Conservation: a White Paper on Local Ordinance Approaches**

*By Sandra S. Nichols*

Developed on behalf of the Montgomery, Alabama Tree Commission, this paper is a discussion of various approaches to conservation of urban forests on private property. It represents a collection of examples from ordinances from cities and counties around the United States, relevant scientific and policy information, and analysis and conclusions. Localities have created a broad range of methods for regulating private trees, with names including tree cutting ordinance, tree permitting ordinance, and tree conservation ordinance. This report considers all approaches that aim to manage trees on private property. In addition, tree conservation ordinances are only one type of tree regulation that municipalities and counties commonly adopt. Thus, relevant aspects of related ordinances and planning strategies are also discussed in this paper.

More information at: [http://actrees.org/files/Newsroom/tree\\_ordinance\\_white\\_paper.pdf](http://actrees.org/files/Newsroom/tree_ordinance_white_paper.pdf)

### **Using ordinances to protect urban trees**

*By W. Elmendorf*

This 1993 article appears in the Proceedings of the Sixth National Urban Forestry Conference, Minneapolis, MN, p. 111-113. Many communities are taking aggressive steps to protect trees in response to increasing developmental pressures. In many cases, following public outcry and support communities are using municipal ordinances to preserve and enhance native and landmark trees on both public and private property. Ordinances have proven to be successful in tree preservation as well as in improving community image, and the quality of development.





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### WEB RESOURCES

#### **Clarion Associates**

Clarion Associates is a national leader in developing design standards for all types of projects. Clarion advises government planners on the importance of design guidelines in contributing to overall community quality, and explains to private developers that well-designed projects provide them a marketing advantage. The firm's scope of talents in urban design, real estate economics, and land-use planning allows it to develop creative guidelines and standards for a variety of clients and applications.

More information at: [www.clarionassociates.com](http://www.clarionassociates.com)

#### **Louisiana State University Green Laws, "Landscape Ordinances Research Project"**

This thorough website is a resource home page for urban design, city planning, urban forestry, site design, landscape architecture, architecture, site engineering, land use law, and land development. It highlights legal standards and technical requirements for site development planning, tree preservation, and landscape ordinance legislation.

More information at: [www.greenlaws.lsu.edu](http://www.greenlaws.lsu.edu)

#### **Urban Forestry South - USDA Forest Service, Southern Region, "Tree Ordinances"**

This website provides some examples of successful tree ordinances in American cities and towns. In the South, rapid land development is a major issue. Tree ordinances there often are enacted in response to changes from rapid development. Some ordinances apply to public property and the public right-of-way along streets, while others regulate tree loss and replacement on development projects. Searching "ordinance" in the website's search box will bring up a number of other helpful ordinance-related resources.

More information at: [www.urbanforestrysouth.org/resources/ordinances](http://www.urbanforestrysouth.org/resources/ordinances)

#### **International Society of Arboriculture, "Guidelines for Developing and Evaluating Tree Ordinances"**

This site provides a variety of tools and resources for citizens and local governments interested in developing, revising, or evaluating local tree ordinances. Rather than using a model ordinance approach, this resource describes how ordinance development can be integrated with an overall community tree management program. The site includes annotated examples of effective tree ordinance provisions used throughout the country. It also provides detailed descriptions of practical methods used to monitor community tree resources, tree management activities, and community attitudes.

More information at: <http://www.isa-arbor.com/publications/ordinance.aspx>

#### **The Center for Watershed Protection, "Model Ordinances"**

Looking for good examples of ordinance language to adapt for your local community? Here you will find model ordinances and a few real-world ordinances from all over the nation used to better protect the environmental resources of a community. While geared towards watershed protection, the language and strategies used may be useful to communities preparing or working to craft their own tree ordinances.

More information at: [http://www.cwp.org/Resource\\_Library/Model\\_Ordinances/index.htm](http://www.cwp.org/Resource_Library/Model_Ordinances/index.htm)

