



*SUSTAINABLE ENVIRONMENT for QUALITY of LIFE*



## TREE PLANTING STANDARDS

### What is it?

Trees are the original multi-taskers, playing a vital role in social, ecological and economic spheres. As trees beautify and shade our communities, their leaves and roots clean the air we breathe and the water we drink. Trees serve as nature’s public utilities with quantifiable results in storm water management, air quality improvement, and energy conservation. With all these benefits in mind, communities have a lot to gain by developing tree preservation, planting, and replacement standards for their area, starting with a tree policy to spell out specific goals. A tree ordinance will give that policy greater definition and muscle as it serves to direct public and private development. With these in place, tree-planting programs can help energize and direct the community effort toward a healthier, more attractive environment.

This Action Item can be implemented as a

- POLICY
- ORDINANCE
- PROGRAM



### Shared Impact and Benefits

- Trees clean the air and produce oxygen, improving air quality.
- By moderating temperatures, trees can also reduce heating and cooling costs, thus saving energy and indirectly contributing to reduced smokestack emissions from energy producers.
- Trees provide shady venues for walking, running, bicycling and other forms of exercise, encouraging activities that promote better health.
- Trees visually enhance streets and communities, making them more desirable places to live and enhancing property values and potential economic development potential.
- Trees reduce storm water runoff, flooding and erosion, improving water quality.

### Costs

Implementing a tree program usually requires the help of an arborist/urban forester (salaried, volunteer, or on a consulting basis). Maintenance staffing needs will vary with the size of the municipality. The property owner, either public or private, incurs planting costs. Grants and other funding opportunities are available, and this action usually engenders significant volunteer support.

### How long does this take to implement?

Reaching a consensus over a broad spectrum of interests groups may require several months of discussion, but once this has been established a draft ordinance can be presented to the local governing board for final recommendations. Upon approval, the ordinance can be published and distributed immediately.

### The Bottom Line

- Trees create a healthier, more beautiful environment, and produce quantifiable results, both to the local community and to the region. The benefits of tree preservation and planting are immediately apparent and an investment in the future.
- Enacting a forward-thinking tree policy, together with an enforceable ordinance and creative and informative tree planting programs, is a highly cost-effective strategy to make a tangible impact on the environmental and aesthetic quality of your community.

**Interested? Read on!**



## Who needs to be involved in implementation?

- Tree advisory commission composed of a combination of members appointed by the local governing board, and the local department of planning, engineering or property management
- Experts: urban foresters, landscape architects, environmental scientists and other volunteers
- Residential and commercial developers and other business leaders
- Concerned citizens groups: arbor society, environmental forums, builders and realtors associations, neighborhood associations, garden clubs.

### Action Steps

1. Assemble a local project team made up of business, environmental groups, planners, landscape professionals, volunteer design consultants, concerned citizens knowledgeable in the field, and members of the city/town council or other local government representatives.
2. Develop a tree policy for the community, describing the intentions of the local governing body regarding the planting of new trees and the care of existing trees in all new and existing development. Consider setting local regulations for tree preservation, bearing in mind that in North Carolina, local governments need to request an amendment by the General Assembly to NC Session Law 2001-191 to have authority to regulate clear-cutting.
3. Appoint a tree advisory commission appointed from the project team.
4. Draft a tree ordinance according to the guidelines set forth in the tree policy. The ordinance should describe the tree advisory commission, its duties and powers and provide standards and guidelines for tree preservation, maintenance, mitigation and planting for both public and private properties. See example tree ordinances at websites listed in the **Who's doing this?** section. For further guidance about the process of drafting a tree ordinance, see: <http://www.urbanforestry.com/citytrees/v33n4a10.html> Find an outline for tree ordinances at: <http://phytosphere.com/treeord/ordprt2b.htm>
5. Present the tree ordinance draft to the governing body to solicit public consideration and comment.
6. Finalize, enact and publish the tree ordinance. Distribute the ordinance to local planners, developers and designers and ensure it is adequately publicized prior to its implementation. Initiate programs for instructing developers and designers about the tree policy and ordinance.
7. Develop volunteer tree planting programs for the public.
8. Track environmental benefits and costs for subsequent evaluation and publicity. <http://www.americanforests.org/graytogreen/>
9. For additional informational guides visit: <http://www2.champaign.isa-arbor.com/tree-ord/> and [http://www.lgean.org/documents/Stormwater\\_Phase\\_II.pdf](http://www.lgean.org/documents/Stormwater_Phase_II.pdf)



## Resources

- City arborist/urban forester salary or consultant position. Staffing needs will vary with the size of the municipality.
- The cost of tree planting depends greatly upon the size of the trees specified. Newly-planted specimens will make an immediate impact, but most tree species reach their mature sizes between 30 and 40 years and live more than 80 years. Instant effects are desirable, but trees should be considered for their long-term benefits. Younger trees are much less expensive and a better investment over all. They adapt much better to transplanting and will likely catch up in size to larger transplants within just a few years. The cost of purchasing and installing a typical 12' maple tree is roughly \$175. Prices vary according to species but often drop considerably when purchased in quantity.
- Trees require maintenance such as watering, pruning, and occasional replacement.
- Tree sponsorship programs encourage individuals or corporations to donate trees, and volunteer efforts often can support tree-planting programs. North Carolina's urban forestry grants consider volunteer efforts an important source of in-kind match.
- On private lands the property owner or developer absorbs the costs.
- For grant information, start with the North Carolina Division of Forest Resources at: [http://www.dfr.state.nc.us/urban/urban\\_grantprogram.htm](http://www.dfr.state.nc.us/urban/urban_grantprogram.htm) or the South Carolina Forestry Commission at: <http://www.state.sc.us/forest/>
- Mecklenburg County's Tree Commission recently had a tree canopy analysis completed by the American Forests Association. This is a valuable resource in assessing the status of a community's tree canopy. Contact Rick Roti, Tree Commission chairman, at [rroti@voicesandchoices.org](mailto:rroti@voicesandchoices.org) or 704-973-4583.

## Who's doing this?

Major cities like Charlotte and Greensboro, along with many smaller municipalities such as Lexington, South Carolina and Salisbury, North Carolina, have all enacted tree ordinances.

Find existing tree ordinance at these websites:

- <http://www.ci.greensboro.nc.us/forestry/>
- <http://www.urbanforestrysouth.usda.gov/ordinances/index.asp>
- [http://fws.municode.com/CGI-BIN/om\\_isapi.dll?infobase=10112.nfo&query=novalue&record={1E59}&softpage=newTestMainnonFrame](http://fws.municode.com/CGI-BIN/om_isapi.dll?infobase=10112.nfo&query=novalue&record={1E59}&softpage=newTestMainnonFrame)

- <http://166.82.30.12/plnning/landdevlop.asp> (Landscape)

For comment about the benefits of tree ordinances and strategies for implementing one, contact:

Melissa Begley  
 Urban Forester — City of Greensboro  
 P.O. Box 3136,  
 Greensboro, NC 27402-3136  
 Ph: (336) 373-2150 Fax: (336) 412-6315  
 Email: [melissa.begley@ci.greensboro.nc.us](mailto:melissa.begley@ci.greensboro.nc.us)

## Tracking Progress

- **Let Centralina Council of Governments know when you've implemented this action by contacting Carol Lewis at 704-348-2730 or [clewis@centralina.org](mailto:clewis@centralina.org), so that we can document actions and results on a region-wide basis.**
- An inventory of existing trees, or canopy measurement, obtained through aerial photography or satellite imagery, will provide a base line for tracking results.
- Public opinion polls and the media will show the immediate impact of improved tree planting standards and practices. Look for downtown business to improve where streets and parking lots have been planted. Property values will also increase as trees mature. But in the longer term, the benefits will also be measured in lower utility costs and health related savings for the community.



## Basic Information

- Make sure that you have staff expertise on urban forestry.
- The issues of tree protection and planting requirements can cause considerable contention among interested parties. Some want to preserve trees for their environmental benefits. Others may have concerns about increased government regulation of private property and higher costs of developing land, even though wooded properties often are more highly desirable and thus highly valued. Fostering mutual understanding and good working relationships among the participants through forums of discussion are key to reaching an informed consensus before any new rules are enacted.
- Many existing zoning ordinances contain prescriptions for landscape planting, and may include tree-planting standards. A separate ordinance for tree planting may not be required; however, zoning ordinances often do not contain enough information to guide a successful tree-planting strategy. Ordinances vary in length and complexity, but the most successful come with clearly illustrated guidelines so that designers and developers can easily interpret them and apply them in their plans.
- The tree ordinance should clearly list and describe what information is required to be illustrated on plans for submittal, including typical planting details and standardized notes to the contractor to ensure that trees are installed and protected correctly.
- The tree ordinance should contain a step-by-step guide of the plan submittal and approval process complete with current contact information of reviewers. Review staff should expect and encourage callers. Questions asked before a plan is submitted make review of submittals easier and less expensive in the long run.

## FAQ'S

**Q: What types of areas should the tree ordinance govern?**

**A:** A tree ordinance should address the protection and maintenance of existing trees as well as the planting of new trees along streets, property edges, parking lots and property interiors for both public and private lands. While addressing the requirements of each particular location type, the role of the ordinance should also provide for the overall extent of tree canopy within the jurisdiction. The ordinance should be designed with tomorrow in mind, helping to guide the character of future development.

**Q: What about conflicts with overhead or underground utility lines?**

**A:** Typically tree ordinances specify that only small maturing trees may be planted near overhead utility lines and they provide a list of appropriate tree species. The ordinance should also list aggressive hydrophilic trees and restrict

their use in locations near water and sewer lines.

**Q: Shouldn't we be concerned about trees blocking views of oncoming cars or pedestrians, or signage?**

**A:** Lines of sight are carefully planned for in tree ordinances to ensure safe visibility distances at all intersections, curves and pedestrian crossings. Proper tree maintenance requirements include pruning low limbs to ensure unobstructed visibility.

**Q: How do we decide what trees the tree ordinance will allow for planting?**

**A:** Although tree ordinances generally place some restrictions on characteristics of acceptable trees, the choice of species is left to the property owner or developer. The ordinance should include lists of recommended species, classifying them, for instance, as large or small maturing, evergreen or decidu-



## FAQ'S (cont.)

ous, indigenous or exotic. Certain trees may be banned due to susceptibility to disease or other concerns. Other species may be recommended for performance, maintenance or ecological considerations. Indigenous tree species, for example, usually require less water and are otherwise better suited for local conditions. The ordinance should serve primarily as a guide for tree planting. Final acceptance of any tree-planting plan ultimately rests upon the appropriate review agency.

**Q: Should the tree ordinance be concerned only with planting new trees?**

**A:** The tree ordinance should not only address planting new trees, but preserving qualified existing trees as well. It should also include guidelines about clear cutting if permitted.

**Q: I've heard that trees produce smog. If we have air quality problems, why are we talking about planting more?**

**A:** In this part of the country, trees naturally produce volatile organic compounds (VOCs) which are a component of ozone. However, ozone production can be controlled by reducing its other component, oxides of nitrogen or NOx. The other benefits that trees produce for air quality and water quality far outweigh the negative of VOC production.

## Intersecting Interests



### CLEAN AIR POLICY

Clean air requires more than just reducing emissions. Tree canopies actually remove emissions, yielding long-term health benefits and savings.



### AIR AWARENESS

Trees are nature's air conditioners, producing oxygen while reducing local levels of carbon monoxide, carbon dioxide, sulfur dioxide and particulate matter.



### GREENWAYS & OPEN SPACE

Tree preservation is integral to a successful open space plan, providing shade, beauty and natural habitat.



### PEDESTRIAN-FRIENDLY STREETSCAPES

Street trees enhance any street, providing a more pleasing pedestrian and motoring experience. Shoppers tend to linger and shop longer along streets lined with trees.



### NATURAL BUFFER ZONES

Trees are key ingredients for water supply buffers, helping to prevent the transport of sediment and chemicals into streams.

## Intersecting Interests



### WASTEWATER TREATMENT PROGRAMS

As trees reduce storm water runoff, incidences of sewer infiltration are reduced, lowering the demands upon existing wastewater treatment facilities.



### WATERSHED IMPACT MODELS

Dense tree canopy and root systems can reduce the impact of development upon nearby bodies of water by reducing soil erosion and storm water runoff.



### SEDIMENTATION & EROSION CONTROL

Trees help control soil erosion by absorbing rainfall and anchoring the soil through root networks. Protecting existing trees on construction sites reduces the cost of additional erosion control measures.



### ENERGY CONSERVATION

In winter, trees can dramatically reduce heating costs by serving as windbreaks. In summer, shade trees on the south and west sides of a house can reduce air conditioning costs by as much as 30 percent.

## For More Information

- American Forests  
*Urban Ecosystem Analysis*  
<http://www.americanforests.org>
- North Carolina Division of Forest Resources  
[http://www.dfr.state.nc.us/urban/urban\\_grantprogram.htm](http://www.dfr.state.nc.us/urban/urban_grantprogram.htm)
- South Carolina Forestry Commission  
<http://www.state.sc.us/forest>
- Society of Municipal Arborists  
<http://www.urban-forestry.com>
- Guideline for Developing and Evaluating Tree Ordinances  
<http://www2.champaign.isa-arbor.com/tree-ord/>



Photo courtesy of Walkable Communities, Inc.

**Prepared by Centralina Council of Governments  
in collaboration with  
Catawba Regional Council of Governments,  
August, 2003.**