

Status of Tree Ordinances in South Carolina

October 2003



**THE
STROM THURMOND
INSTITUTE**



Status of Tree Ordinances In South Carolina

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INTRODUCTION

Trees are a constant in South Carolina's heritage and culture. A tree even appears on the state flag and the state seal representing the palmetto log fort defended on Sullivan's Island by General Moultrie in 1776. Angel Oak, estimated to be over 1400 years old, is a popular visitor attraction on Johns Island. Few who think of the state's plantations do so without envisioning stately live oaks drenched in Spanish moss. The state is also known for its timber harvest, producing millions of dollars annually in unprocessed forest materials and stumpage. Several municipalities and communities derive their names from trees, including: Live Oak, Isle of Palms, Pine Ridge, Myrtle Beach, Sycamore, and Hickory Grove. Summerville, home of one of the oldest tree protection ordinances in the United States, is known as the "Flowertown in the Pines," and Conway bills trees as its "oldest citizens." It seems safe to say that trees are a valued economic and natural resource in South Carolina.

Even a strong sense of place, however, can be subdued when a "Hurricane Hugo" is experienced where trees take a hit and the song birds leave for years at a time in search of a new home. Nature will take its course, and there will be times of upsetting natural occurrences. More unsettling, though, are the human activities that show a disregard for the surrounding neighbors and the natural resources. The proliferation of large dirt lots scraped bare of hearty trees in preparation for development, and the death of taxpayer funded trees because of improper planting, location, or lack of on-going maintenance are a few obvious examples of short sightedness.

Urban forestry programs take a variety of forms designed to protect and nourish the urban forest. In general terms, the urban forest is defined as trees and related vegetation in a city or community. Twenty-nine South Carolina cities and three military installations have been named Tree Cities USA. Arbor Day is celebrated across the state every year. The call to voluntarily plant 100 trees

across the state in recognition of South Carolina Senator Strom Thurmond's 100th birthday resulted in the planting of almost 200 trees. Organizations in the state provide training on tree related subjects such as pruning or tree maintenance issues. Other training focuses on low impact development for planners and developers and the science and benefits of trees in elementary schools. A number of South Carolinians volunteer their time on tree boards or planning commissions spending numerous hours on conducting or developing tree inventories or tree plans. Some South Carolina developers have preserved, planted, and have on-going maintenance programs in their developments – even when regulations were non-existent or required far fewer trees.

So why then are tree ordinances needed? Change is happening more rapidly and on a broader scale than ever before and our communities are vastly different than they were even a decade ago. Because of the changes, a number of tests are presented at the local level, and it is important that communities anticipate future challenges and opportunities. The comprehensive planning process is intended to assess current and projected community status, understand the community's needs and desires, consider options and implications, identify specific policies and projects, and to strategize to make the policies and plans come to fruition. As a component of a broad based urban forestry program, regulation is one of the tools used to protect and replenish the urban forest.

In order to support citizens' efforts to move closer to healthy, stable, and tree-canopied surroundings, it is helpful to know which communities have ordinances and what they are regulating. A number of local governments have faced issues related to drafting and implementing tree ordinances. They know what works well and what doesn't for their communities, and fortunately, they have been willing to share the information. This study was intended to collect this information in order to enhance awareness of current policy initiatives.

REGULATIONS

In addition to the local regulations addressed in this report, there are other state and federal regulations that have relevance to the authority and practice of tree regulation in South Carolina. Some potentially applicable laws which should be reviewed in further detail have been identified below.

Federal Regulations

Clean Water Act. 33 USC §1251 et seq.

Regulation and reduction of source and non-point source pollution, including prescribed Best Management Practices (BMPs) for reducing nonpoint source pollution. (1972, 1982)

Endangered Species Act. 16 USC §1532 [19].

Protects threatened and endangered species and their habitat.

Resource Conservation and Recovery Act. 42 USC §6901 et seq.

Prohibits disposal of solid waste outside of an approved solid waste facility.

State Regulations

SC Water Pollution Control Act. S.C. Code §48 – 1.

Control pollution of water bodies through implementation of Best Management Practices (BMPs) in Forestry. Administered by SC Department of Health and Environmental Control (DHEC).

Coastal Zone Act Reauthorization Amendments, Tidelands and Wetlands. S.C. Code §48 – 39.

Intended to strengthen state efforts to reduce non-point source pollution in an expanded coastal zone.

South Carolina Conservation Easement Act of 1991. S.C. Code § 27– 28.

Allows landowners to voluntarily preserve important natural and cultural sites, while allowing (in some cases) landowners to maintain current practiced uses of the land. The easement may prevent the conversion of valuable property to future real estate development, industrial use, and commercial use. Also reduces the amount of property taxes that the owner would have to pay and a 25% income tax deduction will be given to landowners who sell their conservation easement to a state or non-profit land trust. (1991)

South Carolina Conservation Bank of 2002 S.C. Code §48- 59.

Established a dedicated funding source that will be used to preserve natural and historic lands in the state. A percentage of the real estate transfer fee is used to

purchase land or conservation easements from willing sellers. The Act awards grants on a competitive basis to state agencies, local governments and non-profit land trusts that purchase unique and special places. Land purchased outright will be used for parks, green space, public hunting areas and historical sites. (2002)

Critical Area and Navigable Waters Permits, Tidelands and Wetlands. S.C. Code §48-39.

Requirement of a SC DHEC permit for all activities in area of State's coastal zone, or bridge or cable crossing for silviculture activities in State navigable waters. Administered by SC Department of Health and Environmental Control (DHEC).

SC Forest Management Protection Act. S.C. Code §50-2-20.

Encourages and protects landowners' ability to maintain their land for forest use and to conduct forest management activities.

SC Forestry Best Management Practices Act. S.C. Code §48-36.

While non-regulatory, state code establishes Best Management Practices Related to Forestry.

Heritage Trust Program of 1976. S.C. Code §51-17.

Created to preserve natural features and cultural remains. Seeks to inventory, evaluate and protect those sites considered to represent state heritage. Funded by appropriations, the Endangered Wildlife Fund, the Endangered Species License Plate, and a portion of the real estate documentary stamp tax. (1976)

Home Rule Act of 1975 S.C. Code §5-7.

Provides local governments with greater uniformity as well as the freedom and flexibility to control local affairs. (1975)

Local Government Comprehensive Planning Enabling Act of 1994. S.C. Code §6-29.

Functions, powers, and duties of local planning commissions, S.C. Code §6-29-340.

Establishes the organization and power counties and municipalities can utilize in their planning efforts. Relative to tree management, under Section 6-29-340 of the Act, the Planning Commission has the power to develop a landscaping ordinance setting forth required planting, tree preservation, and other aesthetic consideration for land and structures. (1994)

Zoning S.C. Code § 6-29-720.

Under Section 6-29-720 of the Comprehensive Planning Act, the governing body is authorized to regulate different aspects of the site plan development including tree preservation, landscaping, and buffers. (1994)

Land Development Regulation, S.C. Code §6-29-1110 to 1200.

These land development regulations govern the conversion of raw land into subdivided lots for the construction of buildings. These regulations also control site design, street layout, and provisions for water and sewer service. Councils may adopt land development regulations when the community facilities element of the comprehensive plan has been adopted. (1994)

**From the Municipal Association of South Carolina's
Comprehensive Planning Guide for Local Governments**
(http://masc.sc/Resources/comp_planning_guide.pdf)

Landscaping and Aesthetics

Landscaping regulations, which can be included in the zoning ordinance, are important in protecting aesthetics of the community. Landscaping regulations can apply to particular sections, zoning districts or to the entrance corridors of the community instead of the entire planning jurisdiction. Regulations might include provisions limiting curb cuts, requiring parallel frontage drives, requiring landscaping plans for strips of property adjacent to street rights-of-way, and requirements for landscaping areas within off-street parking slots.

The landscaping ordinance can also be used to prevent the cutting of specimen trees on private property within a specified distance of the street rights-of-way. A landscaping ordinance imposing requirements on private developments is much easier to promote in communities that have made tangible commitments to landscaping of public sites and street rights-of-way. S.C. Code § 6-29-340(B)(2)(d).

Prescribed Burning - Precautions Law, S.C. Code §48- 35.

Requires prescribed burning plan preparation and submittal to SC Forestry Commission prior to burning. (1994)

Right-to-Farm, S.C. Code §12 – 43.

Currently, South Carolina has a statewide right-to-farm law and differential tax assessment rates for agricultural land.

The entire *Code of Laws of South Carolina* can be accessed at:
<www.scstatehouse.net/code/statmast.htm>.

METHODOLOGY

Process

Database Development

Using the listings of the South Carolina Association of Counties (www.sccounties.org/counties/counties.htm) and the Municipal Association of South Carolina (www.masc.state.sc.us/municipalities/memberscities.htm), a database was established which included contact information for each of the 46 counties and 269 municipalities. The database was expanded with U.S. Census information to include population, area, density, per capita income, and percentage of the population over age 25 with a bachelor's degree or higher.

Questionnaires and Responses

In October 2002, a survey was sent out to the county administrator (by name) or municipal administrator (by title) of each jurisdiction asking if the jurisdiction had "regulations relating to trees," if they would send a copy, and for the name of a contact person. In addition to being intentionally open-ended and brief, the survey was designed as a postage-paid business reply card to facilitate responses (see Exhibit 1 "Sample Survey"). Eleven counties (24%) and 54 municipalities (20%) responded to this first questionnaire.

In January 2003, the same survey (using the postage-paid format) was mailed and addressed to the "Director of Planning" of the jurisdictions that did not respond to the first survey. Ten counties (22%) and 32 municipalities (12%) responded to this second questionnaire.

The state's three regional Urban Foresters were contacted for information about counties or municipalities in their regions that had not responded. Ordinances and contact information for three jurisdictions were received.

In March 2003, the South Carolina Association of Counties e-mailed a survey (similar to the first two surveys) to the counties that had not responded.

Where e-mail addresses were not available, surveys were faxed. Twelve counties (26%) responded to this third survey. The same survey was emailed by the Municipal Association of South Carolina to all municipalities having e-mail access. Seven additional municipalities (3%) responded.

Websites were located for as many of the non-responding counties and municipalities as possible. Additional codes were found at www.municode.com and www.amlegal.com. These online codes were searched for relevant tree ordinances. Two counties (4%) and one municipality (<1%) were identified without tree ordinances. Five municipalities were identified with tree ordinances (2%).

In April 2003, attempts were made to contact the 13 remaining counties and 41 of the non-responding municipalities by phone or email. By this time, the contacts with municipalities were limited to those that had more than 5000 people, those which another source had indicated had an ordinance, or those where there was some reason (such as being a tourist destination) to expect to have an ordinance. Nine counties (20%) and 24 municipalities (9%) were successfully contacted by this method (for information about response rates, see Table 1. “Contact Attempts and Responses”).

Table 1. Contact Attempts and Reponses

Source	Counties	Municipalities
Survey 1 (sent in October 2002)	11	54
Survey 2 (sent January 2003)	10	32
Survey 3 (through SC Assoc. of Counties or MASC, March 2003)	12	7 (and 6 duplicates)
Urban foresters	--	3
Direct phone calls or emails	9	24
Online codes—have tree ordinances	--	5
Online codes—do not have tree ordinances	2	1
Unknown	2	143
TOTAL	46	269

Analysis

Several sources were reviewed for information about how to categorize the ordinances, and a classification scheme was developed which relied on these sources (see following section “Assessment Criteria”).

A checklist was also developed using the information provided in several sources (see Exhibit 2 “The Checklist”).

Submitted ordinances and identified online ordinances were reviewed using the checklist. Then the ordinances were categorized into the five categories of regulation using the information available at the time. The ordinances were classified in more than one category in some cases.

Demographic information was analyzed to determine if there was a correlation between the community’s growth or socioeconomic situation and the presence of tree regulations. Maps and tables were prepared depicting this information.

Case Studies

Representative ordinances were chosen from the jurisdictions that had a particular type of ordinance. For tree protection ordinances, the municipalities were divided into three roughly equal groups and one or more representative ordinances were selected (for more information, see Chapter VI, “Tree Protection Ordinances”).

A list of follow up questions was developed for the representative jurisdictions to get a sense of how tree ordinances are developed and enforced (see Exhibit 3 “Questions for Selected Representative Communities”). These questions were sent to interviewees before the scheduled interview. (Note: not all of the questions were applicable to every jurisdiction).

On site interviews were conducted across the state with local government planners, zoning administrators, building officials, enforcement officers, and arborists. When weather permitted, community trees were photographed.

Assessment Criteria and Considerations

This study relies on survey respondents' interpretation of "any regulation relating to trees" requested in the questionnaire. For this reason, there may be ordinances with which the respondent was not familiar that were not submitted. Communities responded with a variety of ordinances related to tree protection, bufferyards, design standards, and/or sections of city codes prohibiting damage to public trees. At least two counties indicated that they did not have tree ordinances, but ordinances were later identified from online codes. Other jurisdictions sent pending ordinances or ordinances in development.

Beyond determining which counties and municipalities had tree ordinances, attempts were made to determine the types of ordinances they had in place. By reviewing several of the sources listed in "For more information" later in this chapter, a categorization method was developed that incorporated several sources' definitions (for more information on ordinance types, see Chapter VI). Based on the information available at the time and the reviewer's judgment, ordinances were classified by the primary focus of the regulation. For this reason there may be ordinances classified as one type when secondary aspects of other types of ordinances are included. In cases where the ordinance includes more than one type of regulation to a significant degree, it is categorized in the appropriate categories. Because of this categorization method, overlap occurs in the data relative to type. It is important to note that the categorization method was not an exact science but rather an indication of regulation focus.

Five main ordinance types were identified and used to categorize the reviewed ordinances.

- Street tree ordinances: Protect public street trees from damage or removal. Often establishes Tree Board/Commission for purposes of applying for Tree City USA designation.
- Landscaping ordinances: Describe required landscaping, number of trees, and types of suitable plants/trees; may require trees or landscaping in parking lots or bufferyards.
- Tree protection ordinances: Limits the number and types of trees that may be removed and mandates replacement. Trees to be protected may be based on size, species, or a combination of both.
- View protection ordinances: Protect special viewsheds from alteration by tree addition or removal (includes protection of highway or road corridors). These ordinances impact designated scenic or historical areas; often found as Design Standards and Board of Architectural Review Standards.
- Timber harvesting ordinances: Regulate silvicultural activities; may require buffers.

Where case study ordinances are included, they are simply representative of the ordinance type. They have not been rated as to quality or enforceability. The study was conducted over the course of a year. Although efforts were made to be as accurate as possible, jurisdictions may have adopted, repealed, amended, or renumbered ordinances since a given phase of research was completed.

For more information:

- International Society of Arboriculture. *Guidelines for Developing and Evaluating Tree Ordinances*. Available at:
<www.isa-arbor.com/tree-ord/>
- Louisiana State University. *Landscape Ordinances Research Project*. Available at:
<www.greenlaws.lsu.edu/landord.htm>

- Martus, C.E., Haney, Jr., J.L., & Siegel, W.C. (1995). Local Forest Regulatory Ordinances. *Journal of Forestry*, 93 (6), 27-31.
- Moll, G., & Ebenreck, S. (eds). (1989). *Shading Our Cities*. Washington, D.C.: Island Press.
- Urban Forestry South. Urban Forestry and Public Policy. In *The Urban Forestry Manual*. Available at:
<www.urbanforestrysouth.org/pubs/ufmanual/publicpolicy/index.htm>

**Exhibit 1.
Sample Survey**

**THE
STROM THURMOND
INSTITUTE**



September 30, 2002

RE: Status of Tree Management Ordinances in South Carolina

Dear Sir or Madam:

Research continues to show the value of trees to personal and community health and well being. At this time, there are different methods to support maintenance and enhancement of tree coverage in South Carolina. Currently, The Strom Thurmond Institute at Clemson University is conducting a study to determine the overall status of municipal and county tree planting and/or management ordinances in South Carolina. More specifically, we will assess what is working well, the challenges encountered, and how programs are being administered. The SC Forestry Commission's Urban and Community Forestry Program is funding this effort to begin to assess the needs and priorities of South Carolina's communities.

As part of this project, we are collecting tree and tree maintenance ordinances from local governments in South Carolina. Consequently, we are asking your assistance in sending us any of your ordinances relating to trees and/or directing us to the resource(s) or contact person who would be best able to assist us with this response or to answer further questions. Only one person from your organization needs to respond.

Please return the attached postage-paid questionnaire by October 15, 2002. Feel free to contact me at (864) 656-4700 or at dlondon@strom.clemson.edu or Ms. Eileen Duffy, the research assistant on this project, at meduffy@clemson.edu if you have any questions.

Once the report is finalized, we will make it available to all respondents.

Thank you for your assistance.

Donna S. London, Project Director

----- (cut here) -----

Status of Tree Management Ordinances in South Carolina

1. ____ City, ____ Town, or ____ County of _____, South Carolina

2. Respondent's Name and Title _____

3. Does your jurisdiction have any regulations relating to trees? ____ YES ____ NO

4. Would you be willing to send a copy of the ordinance or the specific sections relating to trees?
____ YES ____ NO

If yes, please send to my attention (see return address). If there is a shipping fee, please enclose an invoice.

If no, could you provide the section number(s) relating to trees? _____

5. Who is the best person in your jurisdiction to contact with questions relating to local tree ordinances, management, or programs?

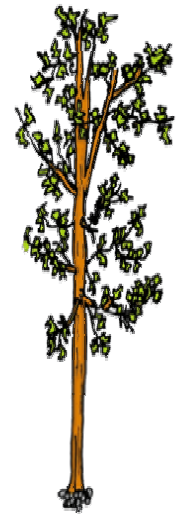
Name _____ Title _____

Department _____ Phone Number (____) _____

Mailing Address _____ E-mail _____

Exhibit 2. The Checklist

COUNTY CITY TOWN of _____ Section Numbers _____ Section Name _____ Date(s) of Adoption _____
--



Provision	Present?
Title	
Findings	
Changes to other ordinances	
Purpose and intent	
Statement of value/benefits of trees	
Definitions	
Determination of definitions (establishes authority figure to interpret definitions)	
Local government disclaims liability	
Jurisdiction of community over trees	
Tree board/commission established	
Authority of tree board/commission established	
Appointment & qualifications of arborist, urban forester, or program manager	
Duties of arborist, urban forester, or program manager	
Enforcement (establishes enforcement authority of designated person)	
Funding	
Community tree plan/survey	
Tree Fund established	
Policies regarding trees (guiding principles of ordinance)	
Licensing of arborists	
Applicability (what property is covered under ordinance)	
Clear-cutting (to prepare property for sale) prohibited	
Maintenance and establishment guidelines (distance from..., prohibit topping)	
Requirement for landscaping/ planted trees in new developments	
Landscaping plan/tree conservation plan/tree survey required	
Open space requirements	
Trees required in buffers	
Street frontage/strip plantings required	
Landscaping/trees required in parking lots	
Automatic irrigation system required	
Guidelines for tree removal & replacement (incl. significant/grand trees), permitting, mitigation	
Species list, including prohibited species	
Protection of trees during construction or development	
Trees as erosion/sediment control	
Protection of public/street trees from damage/abuse	
Obstruction of public property by privately owned trees	
Responsibility for nuisance/hazard trees/condemnations	
Interference with planting, maintenance, and removal unlawful	
Exemptions for timber harvesting, commercial nurseries (incl. permit for sale of timber)	
Appeals, variances	
Penalty for violation	
Performance evaluation of ordinance	
Conflicts with other ordinances	
Severability (prevents whole ordinance from being invalidated by ct if any part is declared invalid)	
Effective dates	
Sanction by higher government bodies	

Type of ordinance:
(check all that apply)

Street tree

Tree protection

Landscaping

View protection

Timber harvesting

Other _____

Sources:

- Fazio, J.R. (1993). *How to Write a Municipal Tree Ordinance*. Tree City USA Bulletin Number 9. Nebraska City, NE: National Arbor Day Foundation.
- International Society of Arboriculture. Basic ordinance provisions. In *Guidelines for Developing and Evaluating Tree Ordinances*. Available at: < www.isa-arbor.com/tree-ord/ordprt2b.htm >
- Iowa State University Forestry Extension. *City Tree Ordinances*. Available at: <www.ag.iastate.edu/departments/forestry/ext/treord.html>
- Louisiana State University. *Landscape Ordinances Research Project*. Available at: < www.greenlaws.lsu.edu/landord.htm >
- Weber, C.C. (1989). Developing a Successful Urban Tree Ordinance. In G. Moll & S. Ebenreck (eds.), *Shading Our Cities* (pp. 142-147), Washington, D.C.: Island Press.

Exhibit 3. Questions for Selected Representative Communities

Drafting the ordinance

- Who drafted the ordinance?
- Who else was involved in the drafting phase of the ordinance?
- Is your ordinance largely based on another jurisdiction's pre-existing ordinance?
- Do you know of any other jurisdictions that may be using your ordinance as a guide to draft their ordinance?
- How long did it take to draft the ordinance?
- How much did it cost?
- What group and/or occurrence was the stimulus behind the ordinance? For instance, was it initiated by businesses, citizens, or government (planning commission, grant, city/county council)?

Passing the ordinance

- When was the ordinance passed?
- What, if any, were the community's concerns noted about the adoption of the ordinance?

Administering the ordinance

- Who administers and enforces the ordinance?
- What board/committee hears appeals to the ordinance or the administrator's opinion?
- Is there an arborist or forester on staff? On the oversight board?
Is there a landscape architect on staff? On the oversight board?
Do you consult with an arborist on development projects?
- How is the ordinance enforced? For instance, does enforcement come into play during the review of development proposals or upon complaint or is there active surveillance?
- What are the penalties for violations of the ordinance?
- Are there any amendments pending? Do you anticipate adoption and, if so, when?
- Do you know roughly how many appeals are heard each year with regard to this ordinance?

- To your knowledge, has the ordinance been challenged in court?
- How much time and money would you estimate implementation to cost the jurisdiction each year?
- Is a landscaping plan including trees required of the developer as part of the development approval process?
- Does the ordinance cover trees on public property?
Does it cover trees on private property?
Does it cover trees in every zoning district?
What types of trees are covered under the ordinance?
- Are residential areas exempted from the ordinance?
- What is the minimum size of trees protected?
- How are developers educated about the ordinance? Citizens? (Are there explanatory brochures, developer notification sheets, etc.?)

Components of an urban forestry plan

- Does your jurisdiction have a tree plan?
- Does it include a tree inventory?
- Who was involved in the development of the plan?
- How long did it take to complete?
- How much did it cost?
- How often is it updated?

Assessing the ordinance

- Overall, do you feel that most people would say the ordinance has been effective?
- Overall, do you feel that the ordinance has been effective?
- What do you feel are the weakest provisions of the ordinance and/or what needs to be improved?
- What do you feel are the most successful provisions of the ordinance?

Other

- What do you see as your jurisdiction's future tree management needs?
- May we publish your jurisdiction's ordinance related to trees on the SC Forestry Commission website?

FINDINGS

Of the 315 jurisdictions contacted, 162 responded, and other sources were consulted yielding eight additional sources of information. Of these, 103 (33 %) have tree ordinances. Sixty-five (21%) of the contacts did not have tree ordinances, and 2 had ordinances pending. Information was not submitted for 145 (46%) of the jurisdictions so their ordinance status is unknown (see Table 2).

Table 2. Overview of County and City Response Rates

	Total Jurisdictions	Actual Responses	Known With Ordinance	Known Without Ordinance	Known Pending	Unknown
Counties	46	42 (91%)	22 (48%)	22 (48%)	-	2 (4%)
Municipalities	269	120 (45%)	81 (30%)	44 (16%)	2 (<1%)	143 (53%)
Total	315	162 (51%)	103 (33%)	65 (21%)	2 (<1%)	145 (46%)

Table 3 is the short list of the 42 counties and 120 cities that responded to the questionnaire along with whether or not they had an ordinance. Also, the two municipalities with pending ordinances are noted. The detailed listing is in Chapter V.

As referenced in the methodology, there is overlap in the ordinance type in that some ordinances include elements from more than one type of regulation. County ordinances reviewed focused primarily on tree protection, followed by landscaping requirements. Tree protection was the focus of most of the municipal ordinances reviewed, followed by landscaping and then street tree protection (Figure 1).

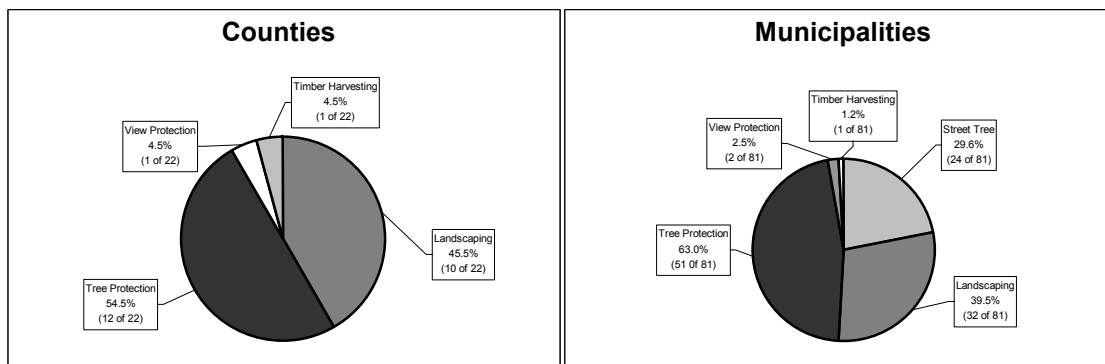
Table 3. Responding Jurisdictions and Ordinance Status

	With Ordinances	Without Ordinances	Pending
Counties	Aiken, Anderson, Beaufort, Berkeley, Charleston, Cherokee, Colleton, Dorchester, Edgefield, Georgetown, Greenville, Horry, Kershaw, Lancaster, Lexington, McCormick, Newberry, Pickens, Richland, Spartanburg, Sumter, and York.	Abbeville, Allendale, Bamberg, Barnwell, Calhoun, Chesterfield, Clarendon, Darlington, Dillon, Fairfield, Florence, Greenwood, Hampton, Jasper, Laurens, Lee, Marion, Marlboro, Oconee, Orangeburg, Saluda, and Williamsburg.	
Municipalities	Aiken, Anderson, Awendaw, Beaufort, Bluffton, Blythewood, Briarcliffe Acres, Camden, Cayce, Central, Charleston, Cheraw, Chesterfield, Clemson, Clinton, Columbia, Conway, Darlington, Dillon, Easley, Edisto Beach, Florence, Folly Beach, Forest Acres, Fort Mill, Fountain Inn, Georgetown, Goose Creek, Greenville, Greer, Hanahan, Hardeeville, Hartsville, Hilton Head Island, Irmo, James Island, Kiawah Island, Lancaster, Latta, Lexington, Lincolnville, Loris, Manning, Mauldin, McClellanville, Meggett, Moncks Corner, Mount Pleasant, Mullins, Myrtle Beach, Newberry, North Augusta, North Charleston, North Myrtle Beach, Orangeburg, Patrick, Pelion, Pendleton, Pickens, Pinewood, Port Royal, Ridgeland, Rock Hill, Seneca, Simpsonville, Spartanburg, Springdale, St George, Sullivan's Island, Summerton, Summerville, Sumter, Surfside Beach, Tega Cay, Travelers Rest, Union, Walterboro, West Columbia, Whitmire, Winnsboro, and York.	Abbeville, Aynor, Bamberg, Batesburg-Leesville, Bennettsville, Bishopville, Blacksburg, Blackville, Chester, Cordova, Cowpens, Due West, Edgefield, Ehrhardt, Elgin, Eutawville, Gaffney, Govan, Hodges, Jamestown, Johnston, Lake City, Liberty, Lowrys, Lynchburg, McCormick, Olar, Pageland, Pamplico, Pawleys Island, Peak, Reevesville, Reidville, Ridge Spring, Ridgeway, Salley, Saluda, Sharon, Smyrna, Tatum, Trenton, Westminster, and Williamston.	Greenwood Pine Ridge

*Two of the Tree Cities USA, the Town of Iva and the City of Marion, did not respond. These municipalities presumably have tree ordinances as a requirement of the Tree City USA program.

**When Florence County's ordinance was originally submitted, the accompanying documentation indicated that the ordinance was pending. A search of the County Council's online minutes since that date shows that the ordinance has not been considered, and subsequent attempts to reach the county's contact person have been unsuccessful. Therefore, Florence County was considered not to have an ordinance for the purposes of this study.

Figure 1. Ordinance Types Reviewed



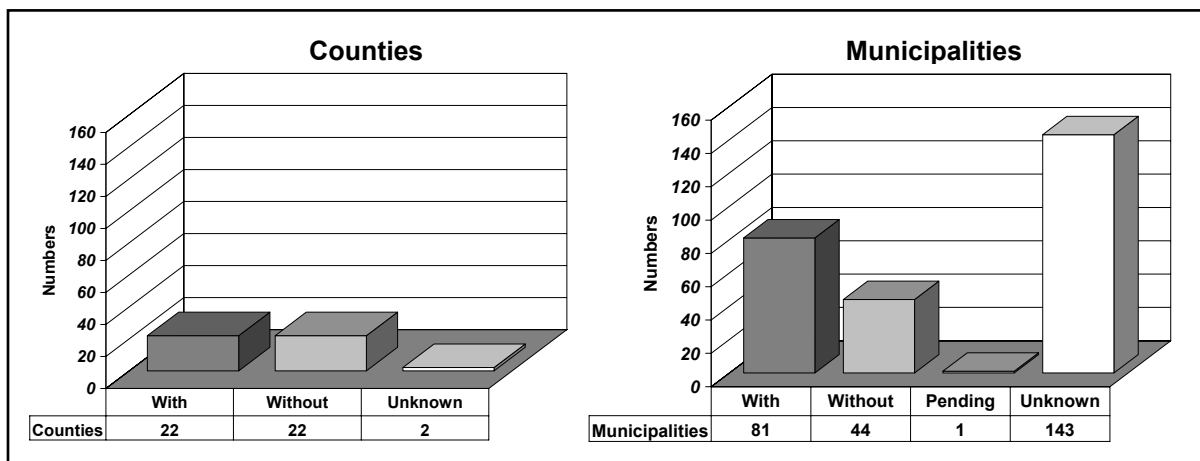
Characteristics of Counties and Municipalities With and Without Tree Ordinances

Numbers and Geographic Mix

Among counties in South Carolina, the results are evenly split between counties that have tree ordinances and counties that do not. Information was not available for two counties. Counties having ordinances tended to be along the coast, in the midlands, or in the upstate along the I-85 corridor. The majority of counties that do not have ordinances (16) are inland and along the coastal plains area of the state with a second concentration in the lower piedmont (See Map 1 “County Tree Ordinance Status”).

Of the 120 municipalities in the state for which information is available, 81 municipalities have been identified as having a tree ordinance of some type, 44 municipalities do not have a tree ordinance, and two municipalities have a pending ordinance. Information is not available at this time for over half of municipalities (143), the majority of which are relatively small in size. As with counties, there are concentrations of ordinances along the coast, in the midlands, and in the upstate. Where county ordinances have not been adopted, ordinances do exist in the major cities of the regions (see Map 2 “Municipalities with Tree Ordinances”).

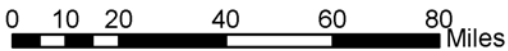
Figure 2. Tree Ordinance Status in South Carolina



Map 1. County Tree Ordinance Status



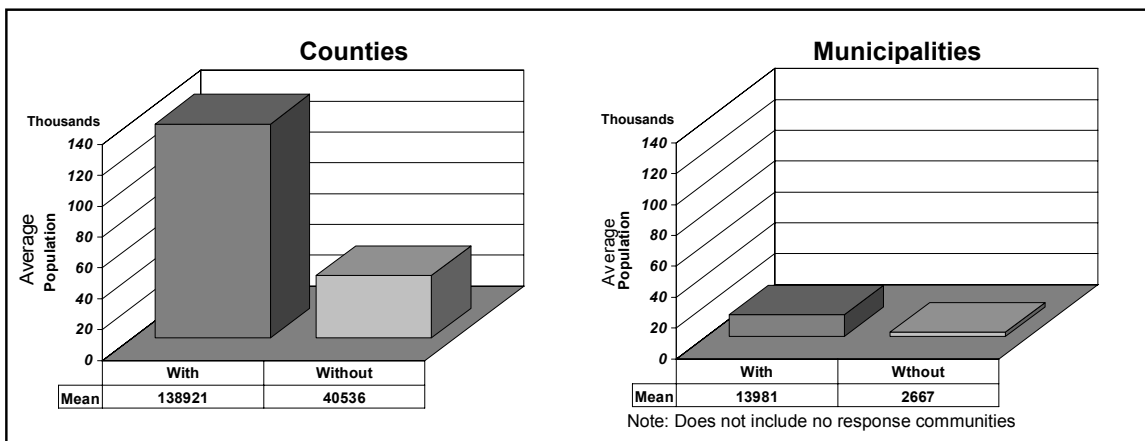
Map 2. Municipalities with Tree Ordinances



Population

In general, the larger the jurisdiction, the more likely it is to have a tree ordinance in place. For counties that have a tree ordinance, the mean population is 138,921 with a median figure of 115,847. For counties without a tree ordinance, the mean population is 40,536 with a median population of 29,770 (Figure 3).

Figure 3. Population for the Year 2000 in South Carolina



For municipalities, the relative differences are larger still. For those municipalities with tree ordinances, the mean population is 13,981 with a median figure of 6,985. For municipalities without a tree ordinance, the mean population is 2,667 with a median population of 981 (Figure 3). For the municipalities for which information was not available, the mean population was 1,234, suggesting that these jurisdictions are comparatively small towns.

Population Growth Rate

Just as relative size is an indication of the likelihood that the jurisdiction has adopted protection measures, population growth rates and population density are also likely to contribute to development of tree protection measures. In terms of growth rate, counties with tree protection programs grew an average of 18 percent between 1990 and 2000. Counties without tree protection measures grew by an average of 10.4 percent over the same time period. For

municipalities, disparities in growth rates were similar at 18.4 and 4.3 percent for cities and towns with and without tree ordinances, respectively (Figure 4).

Population Density

In terms of population density, counties with tree protection measures had an average population density nearly three times that of counties without tree protection measures – 185 persons per square mile versus 68 persons per square mile. For municipalities, the average population density was nearly twice as large in municipalities with protection measures compared to those without at 1,149 to 675 persons per square mile (Figure 5).

Figure 4. Growth Rate in South Carolina, 1990-2000

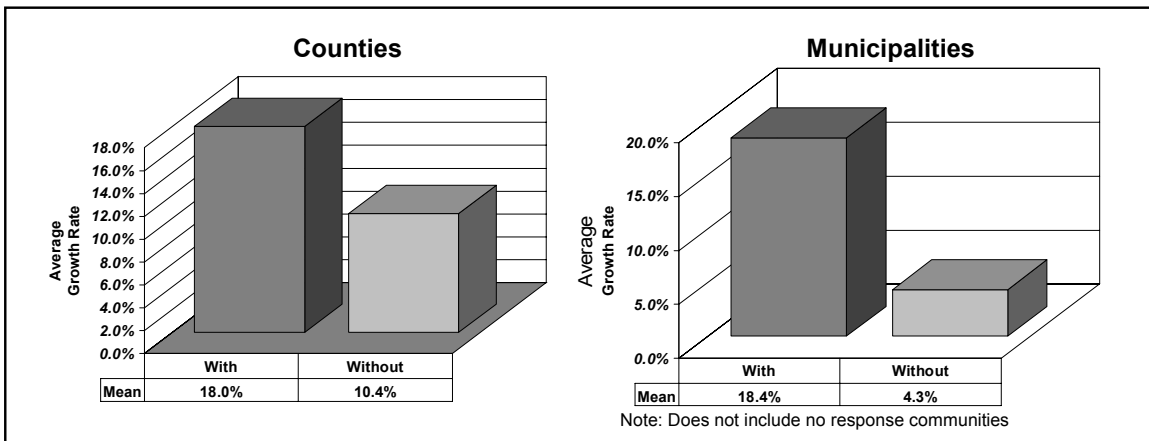
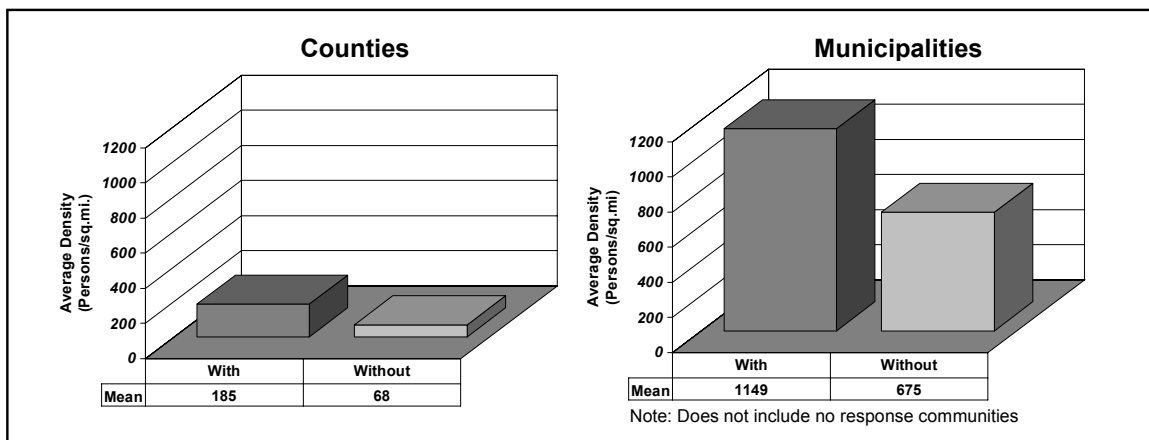


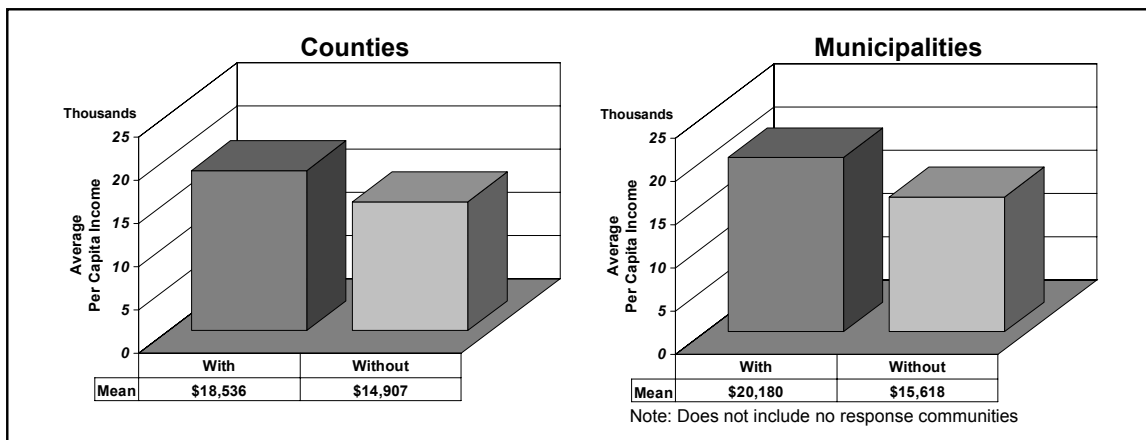
Figure 5. Population Density for the Year 2000 in South Carolina



Per Capita Income

In addition to relative size and growth rates, socio-economic considerations are likely to influence the establishment of tree protection measures. Average per capita incomes in counties with tree protection measures are 24.3 percent higher than those without such measures (\$18,536 versus \$14,907). In municipalities, average per capita incomes are 29.2 percent higher in cities with tree regulations than for those without regulations (\$20,180 versus \$15,618) (Figure 6).

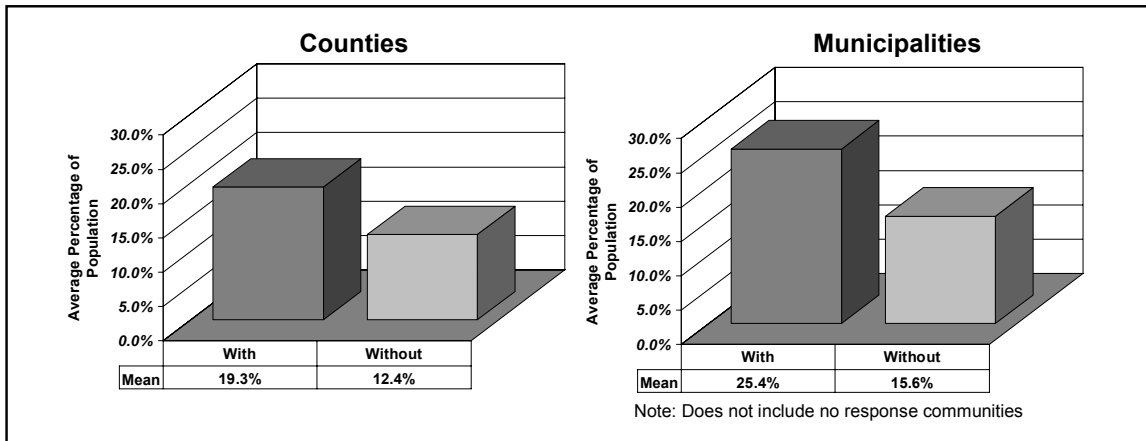
Figure 6. 1999 Per Capita Income in South Carolina



Level of Educational Attainment

In addition to income levels, levels of educational attainment are also higher in communities that have established tree regulations. In counties with some form of tree regulation, an average of 19.3 percent of the adult population has at least a bachelor's degree compared to 12.4 percent of the adult population in counties without tree regulation. In municipalities that responded, an average of 25.4 percent of adult residents have at least a college degree in cities and towns with tree ordinances, while 15.6 percent have at least a college degree in cities and towns without tree ordinances (Figure 7).

Figure 7. Percentage of Population with a Bachelor's Degree or Higher for the Year 2000 in South Carolina



Characteristics of Counties and Municipalities by Type of Tree Ordinance

Number and Geographic Mix

For the purposes of this study, tree regulations are grouped into five categories including street tree ordinances, landscaping ordinances, tree protection ordinances, view protection ordinances, and timber harvesting ordinances. The ordinance types are defined in Chapter III, Methodology.

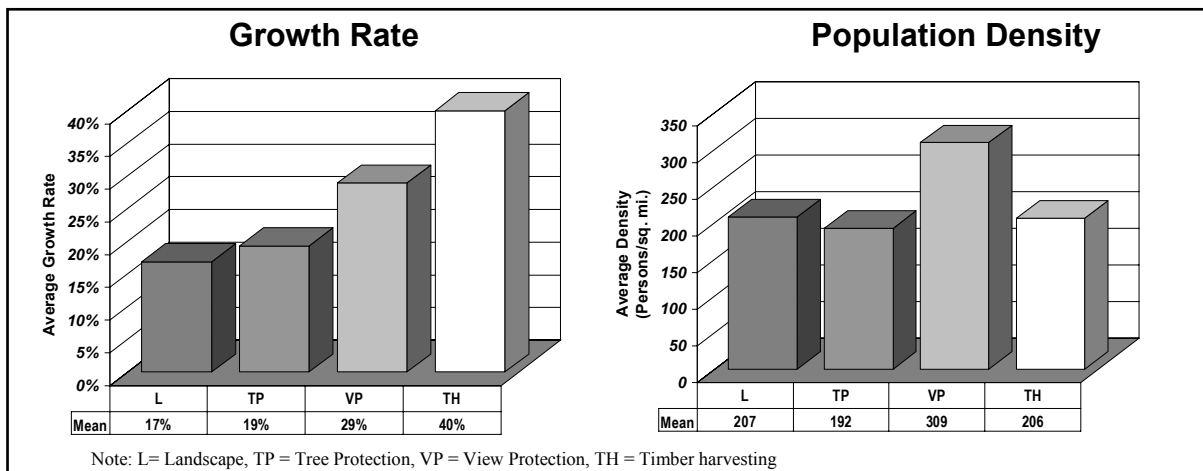
Of the 22 counties indicating that they have a tree protection or landscaping requirement, the most often cited ordinance was tree protection (12) followed by landscaping (10). One county (Lexington) had view protection and one county (Beaufort) had timber harvesting restrictions as part of a more stringent ordinance. No counties had street tree ordinances, which are more likely an issue for municipalities, although Anderson County had one in development.

Among municipalities, by far the most common type of regulation focused on tree protection (52), which represents 64 percent of all communities with some type of protection program. Street tree protection and landscaping requirements were both identified by 14 municipalities. View protection (2) and timber harvesting (1) provisions were little used by municipalities in the state.

Characteristics for Counties

Care needs to be taken in interpreting demographics for counties by type of ordinance since only one county has a view protection ordinance, and one other has timber harvesting regulations. In general, those programs seem to exist in counties with higher than average growth rates and population densities. Those counties also have higher than average levels of income and levels of educational attainment.

Figure 8. County Characteristics by Ordinance Type

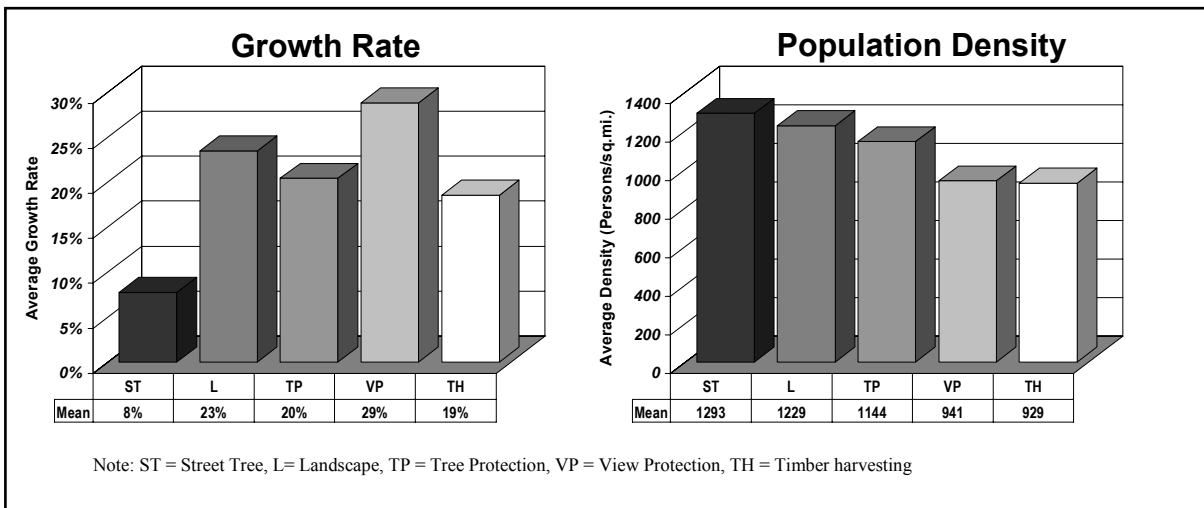


Among landscaping and tree protection programs the differences are not great. Landscaping tends to be in higher populations (158,365 versus 144,830) and population densities (207 versus 192 persons per square mile). Growth rates from 1990 to 2000 tend to be slightly higher for counties that have tree protection programs (19 versus 17 percent). Per capita incomes are slightly higher in counties with tree protection ordinances (\$19,407) than those counties with landscaping ordinances (\$18,270). In both cases, income levels are higher than in counties without either measure (\$14,938). Adults with at least a bachelor's degree averaged 21.3 percent in counties with tree protection ordinances compared to 19.0 percent for counties with landscaping ordinances. For counties with neither ordinances, the number of college graduates averages 12.2 percent. Again the observations are limited, but view protection and timber harvesting protection have higher than usual socio-economic characteristics.

Characteristics for Municipalities

Again because of low numbers, view protection and timber harvesting demographics should be considered with care. The only timber harvesting ordinance submitted was for Columbia, a city with a population of 116,278. View protection was enacted in two small municipalities, Central and Hardeeville, with an average population of 2,658 residents but with average growth rates of 29 percent.

Figure 9. Municipal Characteristics by Ordinance Type



Street tree ordinances tend to be enacted in communities with high population densities (an average of 1293 persons per square mile). Landscaping requirements are more likely to be required in cities with high growth rates (23 percent average) and high population densities (average of 1229 persons per square mile). Tree protection ordinances, by far the most commonly used regulation, tend to be adopted in communities with a slightly lower population density and growth rate. Yet, among all forms of tree protection measures, tree protection ordinances have particularly high socio-economic characteristics. Average per capita income is high at \$22,075, as is the average level of educational attainment (29.1 percent of adults with a four year college degree).

Overall Assessment

It appears that tree regulations are more likely to occur in more populous areas with higher density and growth rates. Communities with tree ordinances also have higher socio-economic characteristics, reflected in higher per capita income and levels of educational attainment.

These findings suggest that tree ordinances are instituted most often in larger and growing communities as a means of protection and enhancement. The higher socio-economic characteristics of communities with protection programs suggest that tree protection and landscaping programs are quality of life issues in these communities.

Tree protection ordinances are the most commonly used regulatory measure followed by landscaping ordinances and in municipalities, streetscaping programs. View protection and timber harvesting ordinances are used sparingly at this time and only in specialized cases.

Table 4. Counties

County	County Seat	Urban Forestry District	Responded to survey?	Ordinance Type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income (\$)	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Abbeville	Abbeville	Piedmont	X				26,167	10%	52	15,370	12.8		
Aiken	Aiken	Coastal	X	L	X		142,552	18%	133	18,772	19.9		Y
Allendale	Allendale	Coastal	X				11,211	-4%	27	11,293	9.3		Y
Anderson	Anderson	Piedmont	X	L			165,740	14%	231	18,365	15.9	Y	Y
Bamberg	Bamberg	Coastal	X				16,658	-1%	42	12,584	15.4		
Barnwell	Barnwell	Coastal	X				23,478	16%	43	15,870	11.6		Y
Beaufort	Beaufort	Coastal	X	TP,TH		X	120,937	40%	206	25,377	33.2	Y	Y
Berkeley	Moncks Corner	Coastal	X	L			142,651	11%	130	16,879	14.4	Y	Y
Calhoun	St Matthews	Coastal	X				15,185	19%	40	17,446	14.2	Y	Y
Charleston	Charleston	Coastal	X	TP,L	X		309,969	5%	337	21,393	30.7	Y	Y
Cherokee	Gaffney	Piedmont	X	L			52,537	18%	134	16,421	11.8	Y	Y
Chester	Chester	Piedmont					34,068	6%	59	14,709	9.6	Y	
Chesterfield	Chesterfield	Pee Dee	X				42,768	11%	54	14,233	9.7	Y	
Clarendon	Manning	Pee Dee	X				32,502	14%	54	13,998	11.4	Y	
Colleton	Walterboro	Coastal	X	TP		X	38,264	11%	36	14,831	11.5	Y	Y
Darlington	Darlington	Pee Dee	X				67,394	9%	120	16,283	13.5		
Dillon	Dillon	Pee Dee	X				30,722	6%	76	13,272	9.2		
Dorchester	St George	Coastal	X	TP			96,413	16%	168	18,840	21.4		Y
Edgefield	Edgefield	Piedmont	X	L	X		24,595	34%	49	15,415	12.5	Y	Y
Fairfield	Winnsboro	Piedmont	X				23,454	5%	34	14,911	11.7		
Florence	Florence	Pee Dee	X				125,761	10%	157	17,876	18.7		Y
Georgetown	Georgetown	Pee Dee	X	TP		X	55,797	21%	68	19,805	20.0	N	Y
Greenville	Greenville	Piedmont	X	L	X		379,616	19%	481	22,081	26.2	Y	Y

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

County	County Seat	Urban Forestry District	Responded to survey?	Ordinance Type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income (\$)	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Greenwood	Greenwood	Piedmont	X				66,271	11%	145	17,446	18.9		Y
Hampton	Hampton	Coastal	X				21,386	18%	38	13,129	10.1		
Horry	Conway	Pee Dee	X	TP,L	X	X	196,629	36%	173	19,949	18.7	Y	Y
Jasper	Ridgeland	Coastal	X				20,678	34%	32	14,161	8.7		
Kershaw	Camden	Pee Dee	X	TP			52,647	21%	73	18,360	16.3		
Lancaster	Lancaster	Pee Dee	X	TP,L	X		61,351	13%	112	16,276	10.2	Y	Y
Laurens	Laurens	Piedmont	X				69,567	20%	97	15,761	11.7		Y
Lee	Bishopville	Pee Dee	X				20,119	9%	49	13,896	9.2		
Lexington	Lexington	Piedmont	X	TP,L,VP	X	X	216,014	29%	309	21,063	24.6	Y	Y
Marion	Marion	Pee Dee	X				35,466	5%	99	13,878	10.2		
Marlboro	Bennettsville	Pee Dee	X				28,818	-2%	59	13,385	8.3		
McCormick	McCormick	Piedmont	X	L			9,958	12%	21	14,770	16.0		Y
Newberry	Newberry	Piedmont	X	L	X	X	36,108	9%	57	16,045	14.8		Y
Oconee	Walhalla	Piedmont					66,215	15%	106	18,965	18.2		Y
Orangeburg	Orangeburg	Coastal					91,582	8%	83	15,067	16.3		Y
Pickens	Pickens	Piedmont	X	L	X		110,757	18%	223	17,434	19.1	Y	Y
Richland	Columbia	Piedmont	X	TP,L	X		320,677	12%	424	20,794	32.5	Y	Y
Saluda	Saluda	Piedmont	X				19,181	17%	42	16,328	11.9		
Spartanburg	Spartanburg	Piedmont	X	L	X		253,791	12%	313	18,738	18.2	Y	Y
Sumter	Sumter	Pee Dee	X	TP,L	X		104,646	2%	157	15,657	15.8		Y
Union	Union	Piedmont					29,881	-2%	58	15,877	9.8		Y
Williamsburg	Kingstree	Pee Dee	X				37,217	1%	40	12,794	11.5		
York	York	Piedmont	X	TP,L		X	164,614	25%	241	20,536	20.9	Y	Y

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

Table 5. Municipalities

Municipality	County	Urban Forestry District	Responded to survey?	Ordinance type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	Tree City USA	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Abbeville	Abbeville	Piedmont	X					5,840	1%	994.89	13,274	11.6		Y
Aiken	Aiken	Coastal	X	TP,L	X		X	25,337	28%	1565.95	23,172	38.1	Y	Y
Allendale	Allendale	Coastal						4,052	-8%	1224.17	10,433	10.7		
Anderson	Anderson	Piedmont	X	L				25,514	-3%	1843.50	18,577	20.0		Y
Andrews	Georgetown, Williamsburg	Pee Dee						3,068	1%	1394.55	12,105	10.1		Y
Arcadia Lakes	Richland	Piedmont						882	-2%	1696.15	37,762	57.2		Y
Atlantic Beach	Horry	Pee Dee						351	-21%	2193.75	12,492	13.3		
Awendaw	Charleston	Coastal	X	TP				1,195		144.32	15,781	12.1		
Aynor	Horry	Pee Dee	X					587	25%	533.64	16,076	16.4		
Bamberg	Bamberg	Coastal	X					3,733	-3%	675.05	13,512	13.1		Y
Barnwell	Barnwell	Coastal						5,035	-4%	659.90	17,709	15.1		
Batesburg-Leesville	Lexington, Saluda	Piedmont	X					5,517	-10%	751.63	16,078	14.8		Y
Beaufort	Beaufort	Coastal	X	TP,L	X	X	X	12,950	35%	695.86	20,501	28.7	Y	Y
Belton	Anderson	Piedmont							-4%	1158.70	16,970	13.6		
Bennettsville	Marlboro	Pee Dee	X					9,425	1%	1686.05	13,917	10.9		Y
Bethune	Kershaw	Pee Dee					4,461	352	-13%	308.77	18,879	20.0		
Bishopville	Lee	Pee Dee	X					3,670	3%	1555.08	16,140	18.9		
Blacksburg	Cherokee	Piedmont	X					1,880	-1%	1016.22	16,833	8.8		
Blackville	Barnwell	Coastal	X					2,973	11%	324.56	11,881	9.2		
Blenheim	Marlboro	Pee Dee						137	-28%	210.77	17,840	12.2		
Bluffton	Beaufort	Coastal	X	TP		X		1,275	73%	37.52	17,327	17.2		Y
Blythewood	Richland, Fairfield	Piedmont	X	L				170	4%	53.80	19,163	23.2		
Bonneau	Berkeley	Coastal						354	-5%	125.53	15,799	5.1		

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

Municipality	County	Urban Forestry District	Responded to survey?	Ordinance type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	Tree City USA	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Bowman	Orangeburg	Coastal						1,198	13%	1032.76	11,662	8.2		
Branchville	Orangeburg	Coastal						1,083	-2%	331.19	14,509	9.1		
Briarcliffe Acres	Horry	Pee Dee	X	TP				470	-15%	723.08	52,871	70.4		Y
Brunson	Hampton	Coastal						589	0%	583.17	14,431	8.1		
Burnettown	Aiken	Coastal						2,720	452%	563.15	15,887	8.2		
Calhoun Falls	Abbeville	Piedmont						2,303	-1%	731.11	10,412	3.8		
Camden	Kershaw	Pee Dee	X	TP,ST			X	6,682	0%	692.44	23,037	35.0		
Cameron	Calhoun	Coastal						449	-11%	142.99	22,463	29.1		
Campobello	Spartanburg	Piedmont						449	-3%	522.09	15,904	14.0		
Carlisle	Union	Piedmont						496	6%	349.30	10,190	6.0		
Cayce	Lexington	Piedmont	X	TP,L	X			12,150	9%	1114.68	17,745	20.3		Y
Central	Pickens	Piedmont	X	L, VP	X			3,522	44%	1461.41	14,394	30.2		Y
Central Pacolet	Spartanburg	Piedmont						267	4%	1112.50	11,663	3.6		
Chapin	Lexington	Piedmont						628	123%	348.89	24,124	30.0		Y
Charleston	Berkeley, Charleston	Coastal	X	TP,L,ST	X	X	X	96,650	20%	996.49	22,414	37.5	Y	Y
Cheraw	Chesterfield	Pee Dee	X	ST			X	5,524	0%	1198.26	13,801	17.6		Y
Chesnee	Spartanburg, Cherokee	Piedmont						1,003	-22%	1114.44	12,993	8.1		
Chester	Chester	Piedmont							-10%	2042.90	13,386	10.3		Y
Chesterfield	Chesterfield	Pee Dee	X	TP,L	X		X	1,318	-4%	383.14	16,481	19.8		
Clemson	Anderson, Pickens	Piedmont	X	L	X			6,476	8%	1619.95	19,272	58.2	Y	Y
Clinton	Laurens	Piedmont	X	TP		X		8,091	1%	890.10	12,933	17.5	Y	Y
Clio	Marlboro	Pee Dee						774	-12%	921.43	14,215	13.6		
Clover	York	Piedmont						4,014	17%	1433.57	16,774	10.7		
Columbia	Lexington, Richland	Piedmont	X	TP,L,ST,TH	X	X	X	116,278	19%	928.59	18,853	35.7	Y	Y
Conway	Horry	Pee Dee	X	TP,L	X	X	X	11,788	20%	927.46	16,611	20.4	Y	Y

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

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Municipality	County	Urban Forestry District	Responded to survey?	Ordinance type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	Tree City USA	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Cope	Orangeburg	Coastal						107	-14%	428.00	18,243	11.8		
Cordova	Orangeburg	Coastal	X					157	16%	348.89	18,332	15.7		
Cottageville	Colleton	Coastal						707	24%	222.33	16,765	6.8		
Coward	Florence	Pee Dee						650	22%	190.06	12,711	3.9		
Cowpens	Spartanburg	Piedmont	X					2,279	5%	978.11	14,847	11.5		Y
Cross Hill	Laurens	Piedmont						601	28%	194.50	12,688	9.9		
Darlington	Darlington	Pee Dee	X	TP,ST			X	6,720	-8%	1566.43	15,454	19.5		
Denmark	Bamberg	Coastal						3,328	-12%	1094.74	11,243	17.2		
Dillon	Dillon	Pee Dee	X	ST				6,316	-8%	1310.37	15,075	15.1		
Donalds	Abbeville	Piedmont						354	9%	421.43	14,333	15.9		
Due West	Abbeville	Piedmont	X					1,209	-1%	737.20	22,758	50.9		
Duncan	Spartanburg	Piedmont						2,870	33%	817.66	13,194	7.2		
Easley	Pickens	Piedmont	X	L				17,754	17%	1668.61	20,965	20.8	Y	Y
Eastover	Richland	Piedmont						830	-20%	669.35	9,304	1.5		
Edgefield	Edgefield	Piedmont	X					4,449	74%	1093.12	8,125	9.7		Y
Edisto Beach	Colleton	Coastal	X	TP				641	89%	302.36	39,400	46.0		
Ehrhardt	Bamberg	Coastal	X					614	39%	193.08	15,974	18.5		
Elgin	Kershaw	Pee Dee	X					806	30%	830.93	17,592	16.0		
Elko	Barnwell	Coastal						212	-1%	182.76	15,973	7.6		
Elloree	Orangeburg	Coastal						742	-21%	772.92	21,711	18.5		Y
Estill	Hampton	Coastal						2,425	2%	685.03	11,682	12.1		
Eutawville	Orangeburg	Coastal	X					344	-2%	369.89	12,352	3.1		
Fairfax	Allendale	Coastal						3,206	38%	965.66	8,940	7.2		
Florence	Florence	Pee Dee	X	ST			X	30,248	1%	1708.93	20,336	26.4	Y	Y
Folly Beach	Charleston	Coastal		TP				2,116	51%	172.59	30,493	50.7	Y	Y
Forest Acres	Richland	Piedmont	X	TP				10,558	47%	2300.22	29,907	47.1		

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Fort Lawn	Chester	Piedmont						864	20%	626.09	14,463	7.5		
Fort Mill	York	Piedmont	X	ST				7,587	54%	1663.82	20,519	28.3	Y	Y
Fountain Inn	Greenville, Laurens	Piedmont	X	ST				6,017	37%	1092.01	18,297	16.0		Y
Furman	Hampton	Coastal						286	10%	91.67	12,227	18.3		
Gaffney	Cherokee	Piedmont	X					12,968	-1%	1649.87	17,755	17.0		Y
Gaston	Lexington	Piedmont						1,304	33%	380.17	13,546	4.2		
Georgetown	Georgetown	Pee Dee	X	TP,ST		X	X	8,950	-6%	1368.50	14,568	15.0	Y	Y
Gifford	Hampton	Coastal							18%	393.62	7,602	4.6		
Gilbert	Lexington	Piedmont						500	54%	220.26	19,909	18.8		
Goose Creek	Berkeley, Charleston	Coastal	X	L	X			29,208	18%	921.68	16,905	20.6	Y	Y
Govan	Bamberg	Coastal	X					67	-20%	89.33	8,834	14.0		
Gray Court	Laurens	Piedmont						1,021	12%	551.89	13,066	7.3		
Great Falls	Chester	Piedmont						2,194	-5%	516.24	13,266	7.2		Y
Greeleyville	Williamsburg	Pee Dee						452	-3%	389.66	17,971	14.6		
Greenville	Greenville	Piedmont	X	TP,ST			X	56,002	-4%	2148.14	23,242	34.2	Y	Y
Greenwood	Greenwood	Piedmont	X					22,071	6%	1612.20	14,347	15.7		Y
Greer	Greenville, Spartanburg	Piedmont	X	TP,L	X	X		16,843	63%	1044.20	17,546	18.6		Y
Hampton	Hampton	Coastal						2,837	-5%	626.27	17,326	18.2		
Hanahan	Berkeley	Coastal	X	TP				12,937	-2%	1284.71	22,629	20.3		
Hardeeville	Jasper	Coastal		VP				1,793	13%	419.91	11,795	5.0	Y	
Harleyville	Dorchester	Coastal						594	-6%	600.00	16,412	12.5		
Hartsville	Darlington	Pee Dee	X	TP,ST		X	X	7,556	-10%	1517.27	19,318	22.0	Y	Y
Heath Springs	Lancaster	Pee Dee						864	-5%	664.62	10,407	6.8		
Hemingway	Williamsburg	Pee Dee						573	-31%	651.14	17,888	23.9		Y
Hickory Grove	York	Piedmont						337	17%	261.24	17,014	13.9		
Hilda	Barnwell	Coastal						436	27%	142.02	11,368	5.1		

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Hilton Head Island	Beaufort	Coastal	X	TP			X	33,862	43%	805.09	36,621	45.9	Y	Y
Hodges	Greenwood	Piedmont	X					158	26%	202.56	14,564	22.9		
Holly Hill	Orangeburg	Coastal						1,281	-13%	948.89	16,437	21.7		
Hollywood	Charleston	Coastal						3,946	88%	196.81	17,521	15.7		
Honea Path	Abbeville, Anderson	Piedmont						3,504	-9%	1004.01	17,643	10.1		
Inman	Spartanburg	Piedmont						1,884	8%	2025.81	15,416	9.0		
Irmo	Lexington, Richland	Piedmont	X	TP,L	X	X		11,039	-2%	2672.88	22,312	39.2	Y	Y
Isle of Palms	Charleston	Coastal						4,583	25%	1025.28	44,221	59.7		Y
Iva	Anderson	Piedmont					X	1,156	-2%	1284.44	14,756	2.8		
Jackson	Aiken	Coastal						1,625	-3%	457.75	17,357	11.1		
James Island	Charleston	Coastal		TP				15,879						Y
Jamestown	Berkeley	Coastal	X					97	15%	167.24	7,021	10.5		
Jefferson	Chesterfield	Pee Dee						704	-6%	395.51	12,924	13.0		
Johnsonville	Florence	Pee Dee						1,418	0%	897.47	15,539	14.9		
Johnston	Edgefield	Piedmont	X					2,336	-13%	930.68	12,671	5.6		Y
Jonesville	Union	Piedmont						982	-19%	962.75	13,116	7.9		
Kershaw	Lancaster	Pee Dee						1,645	-9%	889.19	16,370	10.1		
Kiawah Island	Charleston	Coastal	X	TP				1,163	62%	104.21	47,782	74.6		Y
Kingstree	Williamsburg	Pee Dee						3,496	-9%	1113.38	17,694	22.8		
Kline	Barnwell	Coastal						238	-16%	76.53	10,045	8.8		
Lake City	Florence	Pee Dee	X					6,478	-9%	1363.79	14,452	15.1		
Lake View	Dillon	Pee Dee						789	-10%	469.64	17,790	13.3		
Lamar	Darlington	Pee Dee						1,015	-10%	875.00	15,473	14.0		
Lancaster	Lancaster	Pee Dee	X	ST			X	8,177	-8%	1407.40	16,828	19.2	Y	
Landrum	Spartanburg	Piedmont						2,472	5%	1051.91	14,259	10.0		Y
Lane	Williamsburg	Pee Dee						585	12%	147.36	9,963	5.1		Y

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Latta	Dillon	Pee Dee	X	ST				1,410	-10%	1355.77	17,451	15.4		
Laurens	Laurens	Piedmont						9,916	2%	936.36	14,582	16.8		
Lexington	Lexington	Piedmont	X	TP,L	X	X	X	9,793	198%	1724.12	23,416	34.9	Y	Y
Liberty	Pickens	Piedmont	X					3,009	-7%	704.68	15,327	12.5		
Lincolnton	Charleston	Coastal	X	L	X			904	26%	792.98	16,311	8.8		
Little Mountain	Newberry	Piedmont						255	9%	240.57	22,159	23.8		
Livingston	Orangeburg	Coastal						148	-13%	182.72	13,751	9.5		
Lockhart	Union	Piedmont						39	-33%	278.57	13,263	7.4		
Lodge	Colleton	Coastal						114	-22%	36.31	13,390	8.9		
Loris	Horry	Pee Dee	X	TP				2,079	1%	668.49	13,779	14.5		
Lowndesville	Abbeville	Piedmont						166	2%	212.82	11,048	3.4		
Lowrys	Chester	Piedmont	X					207	4%	65.51	16,652	14.1		
Luray	Hampton	Coastal						115	13%	107.48	13,154	27.9		
Lyman	Spartanburg	Piedmont						2,659	17%	653.32	19,431	16.3		
Lynchburg	Lee	Pee Dee	X					588	24%	520.35	14,608	9.1		
Manning	Clarendon	Pee Dee	X	ST			X	4,025	-9%	1670.12	11,502	14.8		
Marion	Marion	Pee Dee					X	7,042	-8%	1626.33	16,551	17.5		Y
Mauldin	Greenville	Piedmont	X	ST				15,224	31%	1766.13	24,750	34.5		Y
Mayesville	Sumter	Pee Dee						1,001	44%	971.84	10,738	13.2		
McBee	Chesterfield	Pee Dee						714	0%	615.52	12,828	11.6		
McClellanville	Charleston	Coastal	X	TP		X	X	459	38%	220.67	22,425	37.8		
McColl	Marlboro	Pee Dee						2,498	-7%	2356.60	10,177	5.5		
McConnells	York	Piedmont						287	83%	83.43	15,831	12.6		
McCormick	McCormick	Piedmont	X					2,693	62%	716.22	14,338	13.8		
Meggett	Charleston	Coastal	X	TP		X		1,230	56%	84.42	22,906	23.0		
Moncks Corner	Berkeley	Coastal	X	TP		X		5,952	6%	1334.53	15,202	17.0		

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Monetta	Aiken, Saluda	Coastal, Piedmont						220	-23%	297.30	16,867	6.6		
Mount Croghan	Chesterfield	Pee Dee						155	18%	203.95	14,880	11.1		
Mount Pleasant	Charleston	Coastal	X	TP		X	X	47,609	58%	1136.52	30,823	52.6	Y	Y
Mullins	Marion	Pee Dee	X	TP			X	5,029	-15%	1648.85	12,183	12.3		Y
Myrtle Beach	Horry	Pee Dee	X	TP,L	X	X	X	22,759	-8%	1356.32	23,214	22.9	Y	Y
Neeses	Orangeburg	Coastal						413	1%	245.83	11,377	4.7		
New Ellenton	Aiken	Coastal						2,250	-11%	449.10	14,389	20.3		
Newberry	Newberry	Piedmont	X	L	X			10,580	0%	1610.35	17,915	7.3		Y
Nichols	Marion	Pee Dee						408	-23%	293.53	18,092	15.9		
Ninety Six	Greenwood	Piedmont						1,936	-8%	1326.03	15,648	14.3		
Norris	Pickens	Piedmont						847	-4%	448.15	13,825	7.5		
North	Orangeburg	Coastal						813	0%	956.47	14,237	14.0		
North Augusta	Aiken, Edgefield	Coastal, Piedmont	X	L	X			17,574	14%	1021.74	21,391	28.3	Y	Y
North Charleston	Berkeley, Charleston, Dorchester	Coastal	X	TP,L	X	X		79,641	13%	1360.45	14,361	13.8	Y	Y
North Myrtle Beach	Horry	Pee Dee	X	TP		X		10,974	27%	841.56	27,006	27.6	Y	Y
Norway	Orangeburg	Coastal						389	-3%	463.10	18,864	24.2		
Olanta	Florence	Pee Dee						613	-11%	631.96	12,606	10.1		
Olar	Bamberg	Coastal	X					237	-39%	300.00	17,113	13.9		
Orangeburg	Orangeburg	Coastal	X	TP				12,765	-7%	1539.81	15,263	28.8		Y
Pacolet	Spartanburg	Piedmont						2,690	11%	905.72	16,856	6.3		
Pageland	Chesterfield	Pee Dee	X					2,521	-5%	575.57	15,190	12.8		
Pamplico	Florence	Pee Dee	X					1,139	-13%	615.68	14,233	18.0		
Parksville	McCormick	Piedmont						120	-38%	181.82	20,607	7.2		
Patrick	Chesterfield	Pee Dee	X	ST			X	354	-4%	361.22	15,487	2.5		

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Pawleys Island	Georgetown	Pee Dee	X					138	-22%	197.14	48,183	54.7		Y
Paxville	Clarendon	Pee Dee						248	14%	236.19	16,390	11.8		
Peak	Newberry	Piedmont	X					61	-22%	225.93	13,033	6.5		
Pelion	Lexington	Piedmont	X	ST				553	65%	159.83	14,838	16.1		
Pelzer	Anderson	Piedmont						97	20%	510.53	21,518	14.8		
Pendleton	Anderson	Piedmont	X	TP		X			-11%	830.81	16,630	28.9		Y
Perry	Aiken	Coastal						237	-2%	199.16	13,171	15.0		
Pickens	Pickens	Piedmont	X	L			2,966	3,012	-1%	1229.39	16,436	9.8		
Pine Ridge	Lexington	Piedmont	X					1,593	-8%	429.38	18,534	18.4		
Pinewood	Sumter	Pee Dee	X	TP				459	-24%	428.97	10,853	12.1		
Plum Branch	McCormick	Piedmont						98	-3%	264.86	16,358	4.2		
Pomaria	Newberry	Piedmont						177	-34%	170.19	20,524	7.3		
Port Royal	Beaufort	Coastal	X	TP,ST				3,950	32%	1018.04	18,163	22.5	Y	Y
Prosperity	Newberry	Piedmont						1,047	-6%	496.21	15,323	16.8		Y
Quinby	Florence	Pee Dee						842	-3%	758.56	22,804	29.3		
Ravenel	Charleston	Coastal						2,214	2%	179.56	15,495	10.3		
Reevesville	Dorchester	Coastal	X					207	-15%	129.38	17,555	13.8		
Reidville	Spartanburg	Piedmont	X					478		348.91	20,511	11.1		
Richburg	Chester	Piedmont						332	-18%	400.00	13,048	11.3		
Ridge Spring	Saluda	Piedmont	X					823	-4%	449.73	12,083	12.5		
Ridgeland	Jasper	Coastal		L	X			2,518	135%	1044.81	7,394	8.5	Y	Y
Ridgeville	Dorchester	Coastal						1,690	4%	928.57	9,186	5.8		
Ridgeway	Fairfield	Piedmont	X					328	-19%	697.87	14,884	25.1		
Rock Hill	York	Piedmont	X	TP,L,ST	X		X	49,765	20%	1603.77	18,929	24.3	Y	Y
Rockville	Charleston	Coastal						137		311.36	36,620	42.6		
Rowesville	Orangeburg	Coastal						378	20%	478.48	13,978	8.6		

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Ruby	Chesterfield	Pee Dee						348	16%	111.90	16,441	18.6		
Salem	Oconee	Piedmont						126	-34%	150.00	14,980	17.5		
Salley	Aiken	Coastal	X					410	-9%	525.64	12,250	4.9		
Saluda	Saluda	Piedmont	X					3,066	10%	946.30	13,032	12.8		
Santee	Orangeburg	Coastal						740	16%	368.16	15,353	12.8		Y
Scotia	Hampton	Coastal						227	25%	71.38	13,202	1.4		
Scranton	Florence	Pee Dee						942	17%	1134.94	13,094	5.3		
Seabrook Island	Charleston	Coastal						1,250	32%	205.93	49,863	65.6		
Sellers	Marion	Pee Dee						277	-23%	401.45	6,325	1.5		
Seneca	Oconee	Piedmont	X	L	X			7,652	-1%	1083.85	18,498	21.8	Y	Y
Sharon	York	Piedmont	X					421	56%	328.91	13,798	5.3		
Silverstreet	Newberry	Piedmont						216	38%	61.36	17,184	13.5		
Simpsonville	Greenville	Piedmont		TP		X			23%	2307.40	21,139	25.6	Y	Y
Six Mile	Pickens	Piedmont						553	-2%	303.85	23,260	24.7		
Smoaks	Colleton	Coastal					14,352	140	-1%	85.89	20,097	26.2		
Smyrna	York, Cherokee	Piedmont	X					59	4%	83.10	20,575	35.4		
Snelling	Barnwell	Coastal						246	97%	79.87	13,420	8.4		
Society Hill	Darlington	Pee Dee						700	2%	321.10	15,005	9.3		
South Congaree	Lexington	Piedmont						2,266	-6%	703.73	15,543	7.1		
Spartanburg	Spartanburg	Piedmont	X	TP,ST				39,673	-9%	2071.70	18,136	26.0	Y	Y
Springdale	Lexington	Piedmont	X	L				2,877	-11%	719.25	21,260	24.6		Y
Springfield	Orangeburg	Coastal				X		504	-4%	323.08	19,285	16.7		
St George	Dorchester	Coastal	X	TP,L	X			2,092	1%	780.60	13,389	12.1		
St Matthews	Calhoun	Coastal						2,107	-10%	1091.71	14,911	19.8		
St Stephen	Berkeley	Coastal						1,776	5%	721.95	11,258	7.9		
Starr	Anderson	Piedmont						173	5%	116.89	16,350	27.0		

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Stuckey	Williamsburg	Pee Dee						263	-15%	289.01	13,058	9.6		
Sullivan's Island	Charleston	Coastal	X	TP				1,911	18%	786.42	49,427	64.7		
Summerton	Clarendon	Pee Dee	X	TP				1,061	9%	922.61	13,284	15.8		
Summerville	Berkeley, Charleston, Dorchester	Coastal	X	TP		X	X	27,752	23%	1806.77	20,103	26.7	Y	Y
Summit	Lexington	Piedmont						219	-10%	145.03	15,456	13.7		
Sumter	Sumter	Pee Dee	X	TP,L	X		X	39,643	-5%	1490.90	16,949	22.5		Y
Surfside Beach	Horry	Pee Dee	X	TP				4,425	15%	2292.75	24,445	27.5		Y
Swansea	Lexington	Piedmont						533	1%	471.68	16,007	16.8		Y
Sycamore	Allendale	Coastal						185	-11%	58.36	18,297	2.8		
Tatum	Marlboro	Pee Dee	X					69	41%	78.41	17,926	25.0		
Tega Cay	York	Piedmont	X	TP,L	X		X	4,044	34%	1630.65	37,275	51.6	Y	Y
Timmonsville	Florence	Pee Dee						2,315	6%	897.29	11,714	8.8		
Travelers Rest	Greenville	Piedmont	X	L	X			4,099	34%	931.59	15,704	14.0	N	
Trenton	Edgefield	Piedmont	X					226	-25%	173.85	17,352	25.8		
Troy	Greenwood	Piedmont						105	-25%	131.25	15,502	23.3		
Turbeville	Clarendon	Pee Dee						602	-14%	477.78	13,465	11.0		
Ulmer	Allendale	Coastal						102	13%	104.08	16,363	26.0		
Union	Union	Piedmont	X	ST				8,793	-11%	1104.65	16,175	14.1		
Vance	Orangeburg	Coastal						208	-3%	416.00	8,787	7.2		
Varnville	Hampton	Coastal						2,074	5%	548.68	15,706	19.6		Y
Wagner	Aiken	Coastal						863	18%	684.92	13,805	8.6		
Walhalla	Oconee	Piedmont						3,801	1%	1024.53	15,691	15.8		Y
Walterboro	Colleton	Coastal	X	TP		X		5,153	-6%	1038.91	17,150	19.6		Y
Ward	Saluda	Piedmont						110	-17%	141.03	13,026	1.3		
Ware Shoals	Abbeville, Greenwood, Laurens	Piedmont						2,363	-5%	610.59	14,813	11.9		

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

Municipality	County	Urban Forestry District	Responded to survey?	Ordinance type ¹	Parking lot landscaping required?	Commercial forestry exemptions?	Tree City USA	2000 Population	Growth Rate (1990-2000)	2000 Density (persons/sq. mi.)	1999 Per Capita Income	% of population 25 yrs or older with bachelors degree or higher	Ordinance available online? ²	Have a website? ³
Waterloo	Laurens	Piedmont						203	66%	143.97	14,159	5.0		
Wellford	Spartanburg	Piedmont						2,030	-19%	995.10	16,593	9.7		
West Columbia	Lexington	Piedmont	X	TP,L	X			13,064	23%	2152.22	18,135	20.6		Y
West Pelzer	Anderson	Piedmont						879	-11%	1793.88	17,121	7.9		
West Union	Oconee	Piedmont						297	14%	385.71	14,781	5.8		
Westminster	Oconee	Piedmont	X					2,743	-12%	797.38	13,753	9.8		Y
Whitmire	Newberry	Piedmont	X	ST				1,512	-11%	1200.00	13,429	6.6		
Williams	Colleton	Coastal						116	-38%	146.84	17,691	18.3		
Williamston	Anderson	Piedmont	X					3,791	-2%	1055.99	14,085	7.8		
Williston	Barnwell	Coastal						3,307	7%	371.57	15,134	9.9		Y
Windsor	Aiken	Coastal						127	2%	127.00	14,828	3.2		
Winnsboro	Fairfield	Piedmont	X	ST			X	3,599	4%	1110.80	14,135	18.8		
Woodford	Orangeburg	Coastal						196	-2%	248.10	12,158	6.3		
Woodruff	Spartanburg	Piedmont						4,229	-3%	1155.46	14,535	9.8		Y
Yemassee	Beaufort, Hampton	Coastal						807	11%	179.73	14,186	9.0		Y
York	York	Piedmont	X	TP,L	X			6,985	4%	887.55	14,218	14.4	Y	Y

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

Ordinance Type

- TH** **Timber harvesting ordinances** . Regulate silvicultural activities; may require buffers.
- VP** **View protection ordinances**. Protect special viewsheds from alteration by tree addition or removal (includes protection of highway or road corridors). These ordinances impact designated scenic or historical areas; often found as Design Standards and Board of Architectural Review Standards.
- ST** **Street tree ordinances**. Protect public street trees from damage or removal. Often establishes Tree Board/Commission for purposes of applying for Tree City USA designation.
- L** **Landscaping ordinances**. Describe required landscaping, number of trees, and types of suitable plants/trees; may require trees or landscaping in parking lots or bufferyards.
- TP** **Tree protection ordinances**. Limits the number and types of trees that may be removed and mandates replacement. Tree to be protected may be based on size, species, or a combination of both.

¹ Ordinance types: ST=Street tree; L=Landscaping; TP=Tree protection; VP=View protection; and TH=Timber harvesting. Short descriptions appear later in this chapter.

² For complete code citation, please see Chapter VI and appropriate ordinance type.

³ Websites appear later in this chapter.

Table 6. Websites
*Counties**

County	Website
Aiken	www.aikencounty.net
Allendale	www.allendalecounty.com
Anderson	www.andersoncountysc.org
Barnwell	www.barnwellcountysc.com/government.htm
Beaufort	www.co.beaufort.sc.us
Berkeley	www.co.berkeley.sc.us
Calhoun	www.inls.com/calhoun/index.asp
Charleston	www.charlestoncounty.org
Cherokee	www.sc-upstate-info.org/cherokee/index.html
Colleton	www.colletoncounty.org
Dorchester	www.dorchestercounty.net
Edgefield	www.edgefieldcounty.org
Florence	www.florenceco.org
Georgetown	www.georgetowncountysc.org
Greenville	www.greenvillecounty.org
Greenwood	www.co.greenwood.sc.us
Horry	www.horrycounty.org
Lancaster	lancastercountysc.net
Laurens	www.laurenscountysc.org/zoning.htm
Lexington	www.lex-co.com
McCormick	www.mccormickcountysc.com/gov/county.html
Newberry	www.newberrycounty.org
Oconee	www.oconeesc.com
Orangeburg	www.orangeburgcounty.org
Pickens	www.co.pickens.sc.us
Richland	www.richlandonline.com
Spartanburg	www.spartanburgcounty.org
Sumter	www.sumtercountysc.org
Union	www.countyofunion.com
Williamsburg	www.williamsburgsc.com
York	www.yorkcountygov.com

* This list includes only counties for which websites were located.

Table 7. Websites
Municipalities

Municipality	Website
Abbeville	www.emeraldsc.com/abbeville/city/index.html
Aiken	www.aiken.net
Anderson	www.cityofandersonsc.com
Arcadia Lakes	www.tanner5.com/arcadialakes
Bamberg	www.bambergsc.com
Batesburg-Leesville	www.batesburg-leesville.org
Beaufort	www.cityofbeaufort.org
Bennettsville	bennettsvillesc.com
Bluffton	www.blufftonplanning.org
Briarcliffe Acres	www.geocities.com/briarcliffeacres
Cayce	www.caycesc.net
Central	www.cityofcentral.org/
Chapin	www.chapinsc.com
Charleston	www.ci.charleston.sc.us
Cheraw	www.cheraw.com
Chester	www.chestersc.org
Clemson	www.cityofclemson.org
Clinton	www.ci.clinton.sc.us
Columbia	www.columbiasc.net
Conway	www.cityofconway.com
Cowpens	www.cowpens.net
Easley	www.upstatelife.com/cityofeasley/home.htm
Edgefield	www.edgefieldsc.org
Elloree	www.elloreesouthcarolina.com
Florence	www.cityofflorence.com
Folly Beach	www.cityoffollybeach.com
Fort Mill	www.fortmillsc.org
Fountain Inn	www.fountain-inn.com/city.htm
Gaffney	www.cityofgaffney.com
Georgetown	www.cogsc.com
Goose Creek	www.cityofgoosecreek.com
Great Falls	www.freehomepages.com/greatfalls
Greenville	www.greatergreenville.com
Greenwood	www.ci.greenwood.sc.us
Greer	www.cityofgreer.org
Hartsville	www.hartsvillesc.com
Hemingway	townofhemingway.com
Hilton Head Island	www.ci.hilton-head-island.sc.us
Irmo	www.townofirmosc.com
Isle of Palms	www.iop.net
James Island	www.townofjamesislandsc.org
Johnston	www.johnstonsc.org
Kiawah Island	www.kiawahisland.org

Landrum	www.scacog.org/cities/landrum/index.html
Lane	www.lanesc.org
Lexington	www.lexsc.com
Marion	www.co.marion.sc.us
Mauldin	www.mauldin.govoffice.com
Mount Pleasant	www.townofmountpleasant.com
Mullins	www.mullinssc.com
Myrtle Beach	www.cityofmyrtlebeach.com
Newberry	www.cityofnewberry.com
North Augusta	www.northaugusta.net
North Charleston	www.northcharleston.org
North Myrtle Beach	www.n-myrtle-beach.sc.us
Orangeburg	www.orangeburg.sc.us
Pawleys Island	www.townofpawleysisland.com
Pendleton	www.townofpendleton.org
Port Royal	www.portroyal.org
Prosperity	www.prosperitysc.com
Ridgeland	www.ridgelandsc.com
Rock Hill	www.ci.rock-hill.sc.us
Santee	www.santeetourism.com
Seneca	www.seneca.sc.us
Simpsonville	www.simpsonvillesc.com
Spartanburg	www.cityofspartanburg.org
Springdale	www.springdalesc.com
Sullivan's Island	www.sullivanisland-sc.com/
Summerville	www.summerville.sc.us
Sumter	www.sumter-sc.com
Surfside Beach	www.surfsidebeach.org
Swansea	www.swanseascus.com
Tega Cay	www.tegacaysc.org
Varnville	www.varnville.org
Walhalla	stumphousetunnel.com
Walterboro	www.walterboro.org/walterboro
West Columbia	www.westcolumbia.state.sc.us
Westminster	www.westminstersc.com/city.htm
Williston	www.williston-sc.com
Woodruff	www.woodruff-sc.com
Yemassee	www.yemassee.net
York	www.yorkcitysc.com

* This list includes only municipalities for which websites were located.

ORDINANCE TYPES AND CASE STUDIES

Street Tree Ordinances

Street tree ordinances generally protect trees on public property from damage or removal. The ordinances may mandate the species, spacing, and maintenance of street trees. These provisions are included to ensure that the “proper tree species are planted in a given location” (Moll and Ebenreck, 1989, p. 300), preventing large trees from being planted under utility lines or where their roots could damage public property. There may also be provisions for hazardous trees on private property that threaten people or property located in the public right-of-way. Street tree ordinances are often more palatable to a community because they primarily impact public property, as opposed to landscaping and tree protection ordinances, which usually apply to private property.

The Louisiana State University’s landscape ordinance website refers to these ordinances as “tree management laws,” defined as public laws that “regulate the preservation, protection, removal and planting of trees and other landscape features on public land.” Urban Forestry South’s definition is that “street tree ordinances typically establish standards for managing trees on public property.” The International Society of Arboriculture’s definition of “street tree ordinances” include required tree planting in parking lots. For the purposes of this study, an ordinance requiring parking lot landscaping was not considered a street tree ordinance. Instead, it was considered a landscaping ordinance.

Of the ordinances reviewed, street tree ordinances were found only in municipalities. Because street tree ordinances apply mainly to public property, counties are unlikely to have this type of ordinance, although one county (Anderson County) currently has a street tree ordinance in development. Fourteen of the 81 reviewed municipal ordinances (17 percent) were street tree ordinances. Ten more of the 81 ordinances (12 percent) had a street tree component as a part of a more stringent ordinance (such as a landscaping or

tree protection ordinance), bringing the total of municipal ordinances having some type of street tree provisions to 24 (almost 30 percent of the reviewed municipal ordinances). Most of these ordinances were located in the general municipal code because they apply solely to public trees.

Street tree ordinances are often passed as a prerequisite to applying for the Tree City USA designation. Tree City USA, a program of the National Arbor Day Foundation in cooperation with the USDA Forest Service and the National Association of State Foresters, “provides direction, technical assistance, public attention, and national recognition for urban and community forestry programs in thousands of towns and cities.” The four requirements that each municipality must have are: (1) a tree board or department, (2) a tree care ordinance, (3) a community forestry program as well as a two dollar per capita expenditure on forestry activities, and (4) an Arbor Day observance and proclamation (please see Appendix B for more detailed information). According to the Tree City USA program, a tree ordinance “provides an opportunity to set good policy and back it with the force of law when necessary.” The reviewed street tree ordinances often both create a tree board or committee and establish standards for tree care. As of this writing, South Carolina has thirty municipalities and three military facilities with Tree City USA designations.

For more information:

- International Society of Arboriculture. *Guidelines for Developing and Evaluating Tree Ordinances*. Available at: <www.isa-arbor.com/tree-ord/>
- Louisiana State University. *Landscape Ordinances Research Project*. Available at: <www.greenlaws.lsu.edu/landord.htm>
- Moll, G., & Ebenreck, S. (eds). (1989). *Shading Our Cities*. Washington, D.C.: Island Press.
- Tree City USA at: <www.arborday.org/programs/TreeCityBenefits.html>
- Urban Forestry South. Urban Forestry and Public Policy. In *The Urban Forestry Manual*. Available at: <www.urbanforestrysouth.org/pubs/ufmanual/publicpolicy/index.htm>

Table 8. Street Tree Ordinances Reviewed

<i>Municipalities (14 of 269, 5%)</i>		
Municipality	Population	Citation
Cheraw*	5,524	<i>Cheraw Town Code</i> (§ 2-27 to 2-35.1)
Dillon	6,316	"Dillon Tree Ordinance"
Florence*	30,248	www.municode.com (§ 4-250 to 4-261)
Fort Mill	7,587	www.municode.com (§ 38-31 to 38-80)
Fountain Inn	6,017	<i>Fountain Inn Code</i> (§ 20-1 to 20-31)
Lancaster*	8,177	www.municode.com (§ 27.5-1 to 27.5-13)
Latta	1,410	Ordinance Number 2002-04
Manning*	4,025	Ordinance Numbers 2000-02 and 2000-09
Mauldin	15,224	<i>Mauldin Municipal Code</i> (§ 21-31 to 21-49)
Patrick*	354	<i>Code of Ordinances</i> (§ 12.201 to 12.215)
Pelion	553	"Tree Ordinance" (adopted December 15, 1983)
Union	8,793	<i>Union City Code</i> (§ 16-56)
Whitmire	1,512	<i>Code of Laws</i> (§ 10-18 and 15-9)
Winnsboro*	3,599	<i>Municipal Code</i> (§ 3-1051 to 3-1071)

Other municipalities having street tree provisions in the tree ordinances reviewed in this study: Camden, Charleston*, Columbia*, Darlington*, Georgetown*, Greenville*, Hartsville*, Port Royal, Rock Hill*, and Spartanburg*.*

** Municipalities that are Tree Cities USA as of this writing. Other Tree Cities USA not listed here: Aiken, Beaufort, Chesterfield, Conway, Hilton Head Island, Iva, Lexington, Marion, McClellanville, Mount Pleasant, Mullins, Myrtle Beach, Summerville, Sumter, and Tega Cay. This study primarily relied on submitted ordinances; these municipalities do not appear in this section because the ordinance sections submitted did not contain street tree provisions. All of these municipalities, however, must have public tree care provisions in their ordinances to be named a Tree City USA.*

Street Tree Ordinance Case Study: City of Dillon



New streetscaping in Dillon's commercial district.

Introduction

The City of Dillon (pop. 6,316) is the county seat of Dillon County, which is located in the northeastern part of the state. The city embarked on a comprehensive revitalization program four years ago that includes recruiting businesses, installing streetscaping, and refurbishing the Dillon Theater. The city was founded in the early 1900s, and at that time, many of the street trees were planted. Most of these trees are now dying or dead, and Dillon has begun an aggressive urban forestry program as a part of its revitalization efforts.

The Ordinance

The City of Dillon has had a Tree Committee for many years, but recently the committee re-energized and decided that the city should become a Tree City USA. The revitalization coordinator then applied for and was awarded an Urban and Community Forestry grant through the SC Forestry Commission to develop a tree ordinance. During the application process, the city was advised to budget

\$1500 for a consultant to develop the ordinance; however, there were no responses to the request for bids. The Tree Committee finally called on a personal contact and negotiated an ordinance contract with an arborist for \$2500.

The process began with a public education meeting about tree ordinance development. Research of other communities' tree ordinances was conducted by the revitalization coordinator. The consulting arborist met with the Tree Committee and the community. An ordinance draft was developed which was the subject of a third public meeting. Following review and some minor fine tuning by the Tree Committee, the City Council, the state regional urban forester, and Carolina Power & Light (now Progress Energy Carolinas), the ordinance was adopted by council in April of 2003. The city likely will be named a Tree City USA next year.

Most citizens are aware of the ordinance because it was publicized in newspapers through articles and public notices. Tree Committee meetings are open to the public and citizens are encouraged to attend. The revitalization coordinator has also made presentations at the Rotary and Lions Clubs and to a meeting of twelve local garden club presidents. At least one other South Carolina municipality has requested the ordinance to use during its ordinance drafting process.

The ordinance is 14 pages in length and covers all subjects related to street trees. It delineates the duties of the Tree Committee, establishes the urban forestry plan, provides guidelines for establishment and maintenance of the public trees, mandates tree protection measures, and requires tree removal permits. The ordinance applies primarily to street and park trees, but also to "Heritage Trees," which are defined as public or private trees (except for trees on single-family residential lots) that are either (1) 24 inches or greater DBH, (2) of historic or landmark character, or (3) rare or unusual. A separate ordinance requires landscaping in parking lots, and street trees are required of builders as a part of the land development regulations.

Administration

The ordinance names the Street Department Manager or designee as the administrator of the ordinance and of public tree management in general. Tree removal permits require an application detailing the tree location, species, DBH, and reason for removal of public trees and private heritage trees. Appeals to the Tree Committee's action are heard by the Mayor and City Council.

Enforcement

Enforcement is the responsibility of the city's Code Enforcement Officer. By establishing and maintaining good relationships with community members and business interests during the development of the ordinance, the city has strong allies in its quest to protect trees. Not only do citizens report violations, but often the state Department of Transportation will notify code enforcement as well. Ordinance violators are fined up to \$500 per offense and ordered to compensate the city (based on a certified arborist's appraisal) for trees damaged or removed. This money is placed in the Tree Committee's account to fund the city's tree program.

Assessment

Dillon's ordinance includes topics relevant to public trees and is thorough in its specifications. Overall, the revitalization coordinator feels that the ordinance has been effective, primarily because it is well written. She also feels that Dillon's residents would agree that the ordinance has been successful. There have been no concerns noted or amendments to the ordinance at this point. The Tree Committee member requirements are stringent—if the member is not there to work, he or she can be dismissed quickly through the ordinance's performance and attendance criteria.

Future Plans

Dillon has set several goals for the future. The first is the designation of heritage trees on private property, which are defined in the ordinance but have not yet been identified and cataloged. Another goal is continued citizen education, particularly about identification and notification procedures about hazardous trees and utility companies' tree-pruning practices. Finally, Dillon is continuing its tree inventories and planting plans district by district, while continuing to seek more grants to further improve the town's appearance.

Conclusion

Dillon's urban forestry program has achieved notable results in its few years of existence. Much of this success can be attributed to the vision of a revitalized Dillon and to the citizens' volunteer efforts. The city has a detailed plan to inventory the city's trees and plants and establish planting plans. Dillon's strategic and organized efforts are moving it closer to its goals of beautification and revitalization.



Residential area in Dillon.

Landscaping Ordinances

Landscaping ordinances require landscaping, including trees, as part of a development. The important difference between landscaping and tree protection ordinances is that while both may require a certain amount of post-development landscaping and trees, landscaping ordinances do not prohibit removal of existing trees. Instead, they establish how many trees must be there after development.

Landscaping ordinances correspond to Moll and Ebenreck's (1989) "development ordinances" which regulate construction and development impacts on an area. Louisiana State University's website refers to these ordinances as "post construction landscape ordinances" which "generally regulate landscape design, landscape installation, tree preservation and landscape maintenance on private lands." The preceding definition differs from this study in that tree preservation is not included in the study's landscaping ordinance classification. If trees are required to be preserved and protected, this study has labeled those ordinances "tree protection ordinances." Urban Forestry South states that "landscaping ordinances establish standards for landscape design and plant material."

While tree preservation is not required, some jurisdictions use language like existing trees "shall be preserved whenever possible" and may give "credits" for tree retention. Ordinances that mandate buffers with tree requirements are included in this category, as are ordinances only requiring landscaping and trees in parking lots. The ordinances may apply to public and private property, and are sometimes applied to residential properties. York County is somewhat unique in that a certain number of trees are required on residential lots in the Traditional Neighborhood Development (TND) zone based on the lot width and type of unit (*York County Zoning Ordinance*, § 155.243). Also, the City of Goose Creek requires a minimum of seven percent of each residential lot to be landscaped.

Design principles, a preferred species list, planting specifications and/or maintenance guidelines may also be included in the landscaping ordinances.

Landscaping plans are often required before a construction permit is issued. When an enforcement program is limited because of resources, review and approval of the plans is the mechanism used to ensure compliance. Myrtle Beach's parking lot regulations are unusual in that they require landscaping on preexisting parking lots within a specified timeframe (*Myrtle Beach Code*, §910.2.3).

A number of South Carolina's counties and municipalities have landscaping ordinances. Often, these ordinances address only landscaping in parking lots. Ten of the 22 reviewed counties' ordinances (45 percent) were landscaping ordinances; six of these landscaping ordinances required parking lot landscaping. Six more of the 22 county ordinances (27 percent) had a parking lot landscaping component as a part of a more stringent tree protection ordinance. In total, 12 of the 22 county tree ordinances reviewed required landscaping in parking lots. Within the past year, Greenville County (pop. 379,616), the largest county in the state, adopted a parking lot landscaping ordinance. The smallest county to require parking lot landscaping is Edgefield County (pop. 24,595), although it does not specifically require trees.

Fourteen of the 81 reviewed municipalities' ordinances (17 percent) were landscaping ordinances; nine of these landscaping ordinances required landscaping in parking lots. Eighteen more of the 81 ordinances (22 percent) had a parking lot landscaping component as a part of a more stringent tree protection ordinance. In total, 27 of the 81 municipal tree ordinances reviewed required landscaping in parking lots (33 percent). The largest city to require parking lot landscaping is Columbia (pop. 116,278), while the smallest city was Lincolntonville (pop. 904) in Charleston County. At least one municipality (Greenwood, as a part of the proposed zoning code) has a landscaping ordinance pending.

For more information:

- Louisiana State University. *Landscape Ordinances Research Project*. Available at:
<www.greenlaws.lsu.edu/landord.htm>
- Moll, G., & Ebenreck, S. (eds). (1989). *Shading Our Cities*. Washington, D.C.: Island Press.
- Urban Forestry South. Urban Forestry and Public Policy. In *The Urban Forestry Manual*. Available at:
<www.urbanforestrysouth.org/pubs/ufmanual/publicpolicy/index.htm>

Table 9. Landscaping Ordinances Reviewed

<i>Counties (10 of 46, 48%)</i>		
County	Population	Citation
Aiken	142,552	www.municode.com (§ 24-122 to 24-124)
Anderson	165,740	www.municode.com (§ 38.122; 38-396 to 38-397)
Berkeley	142,651	www.co.berkeley.sc.us/development/departs/planning/zone/17.pdf (§ 17.1 to 17.8)
Cherokee	52,537	<i>Land Development Regulations</i> (Ch. 13, Appendix A)
Edgefield	24,595	www.amlegal.com (§ 152.061)
Greenville	379,616	www.greenvilleplanning.com/land_development/zoning_ordinance/article6.htm#6:9 (§ 6:9.8 to 6:9.12)
McCormick	9,958	<i>McCormick County Code of Ordinances</i>
Newberry	36,108	“Article 7: Landscaping and Buffer Yard Regulations” (§ 700 to 706)
Pickens	110,757	www.municode.com (§ 4.2.4(b)(2); 4.11.1 to 4.11.12)
Spartanburg	253,791	www.spartanburgcounty.org/govt/depts/pln/docs/article2.pdf (§ 2.02-2 to 2.02-4; 2.02-6)
<i>Municipalities (14 of 269, 5%)</i>		
Municipality	Population	Citation
Anderson	25,514	“Landscaping and Screening Requirements” (§ 13.1 to 13.10)
Blythewood	170	“Article 7: Landscaping” (§ 700 to 706)
Central	3,522	“Bufferyards” (§ 726.1 to 726.13) and Ordinance Number 94-11-07
Clemson	11,939	www.municode.com (§ 19.451 to 19.457)
Easley	17,754	www.upstatelife.com/cityofeasley/docs/Easley_Zoning_Ordinance_Final_Jan_2_2001_1.pdf (§1.5.12; 3.1.15; 5.1 to 5.12)
Goose Creek	29,208	www.cityofgoosecreek.com/cities/goosecreeksc/docs/UploadedPages/zoning.htm (§ 501.1; 504.1 to 504.2; 1008.4)
Lincolnton	904	<i>Lincolnton Zoning Ordinance</i> (Ch. 11)
Newberry	10,580	“Article 7: Landscape Requirements” (§ 7-1 to 7-10)

North Augusta	17,574	www.northaugusta.net/Dept_Serv/zoning/ZONEORD3.htm (§ 3.j.2, 3.k.11 to 3.k.13, 7.d.1 to 7.d.6)
Pickens	3,012	“Article VII: Bufferyards” (§ 701 to 712)
Ridgeland	2,518	www.ridgelandsc.com/zoningordinance.pdf (§22.21), www.ridgelandsc.com/subdiv.pdf (§ 6-11)
Seneca	7,652	www.seneca.sc.us/pdf/updatedordinance.pdf (§ 730)
Springdale	2,877	<i>Subdivision Regulations</i> (§ 6-10)
Travelers Rest	4,099	<i>Travelers Rest Code</i> (§ 6:9)

Of the above counties, the following required parking lot landscaping in the ordinances reviewed: Aiken, Edgefield, Greenville, Newberry, Pickens, and Spartanburg.

Other counties reviewed in this study which have parking lot landscaping requirements in addition to tree protection requirements: Charleston, Horry, Lancaster, Lexington, Richland, and Sumter. York County requires landscaping in some new residential developments, as discussed above (all of these counties are classified TP,L).

Of the above municipal ordinances reviewed, the following required parking lot landscaping: Central, Clemson, Goose Creek, Lincolnville, Newberry, North Augusta, Ridgeland, Seneca, and Travelers Rest.

Other municipal ordinances reviewed which have parking lot landscaping requirements in addition to tree protection requirements (classified as TP,L): Aiken, Beaufort, Cayce, Charleston, Chesterfield, Columbia, Conway, Greer, Irmo, Lexington, Myrtle Beach, North Charleston, Rock Hill, St George, Sumter, Tega Cay, West Columbia, and York.

Landscaping Ordinance Case Study: City of Newberry

Introduction

The City of Newberry (pop. 10,580) is the Newberry County seat and is located between Columbia and Greenville. The city has maintained a small-town atmosphere and its citizens have worked hard to revitalize its lovely downtown which includes such treasures as the Opera House and the Ritz Theater. The city is rich in history. Previously it was both a railroad depot and a textile capital, in addition to the home of Newberry College since 1856. Following some recent development pressures, Newberry enacted a landscape ordinance two years ago.



Park trees beside the Newberry Opera House.

The Ordinance

Newberry's Landscape Requirements were drafted in response to a national retailer's new development at the edge of town. The store's huge parking lot was largely devoid of landscaping, and citizens characterized the parking lot as a "sea of asphalt" and became overwhelmingly supportive of a landscape ordinance. The ordinance was drafted by the City Manager and the Director of Building and Zoning with the help of the Central Midlands Council of Governments. The only negative reaction to the ordinance came from a local

developer who owns prime parcels of land; he complained that the landscaping added unnecessary costs. The drafting took approximately three months and the ordinance was passed in early 2001.

The ordinance requires that all new developments (and any redevelopments where there is an expected increase in the property's value, size, or parking area) comply with the landscaping standards. Single-family detached housing enlargement or repairs are exempt from the ordinance. Landscaping is required in parking lots at a minimum of four percent of the parking lot's impervious area with one tree for every ten parking spaces. In addition, there are specific standards for the planting, maintenance, and design of new landscaping.



Newberry's Chamber of Commerce.

Administration

A detailed landscaping plan must be submitted for all non-exempt developments. The Director of Building and Zoning administers the ordinance through the review of the plans and site visits at the end of construction. Tree preservation is not required by the ordinance; however, the Planning and Zoning Department has the authority to reduce the landscaping requirements by up to 50 percent if existing trees are preserved according to a schedule based on tree

caliper. Since the ordinance was adopted in 2001, there have been no appeals to the Board of Zoning Appeals and the ordinance has never been challenged in court.

Enforcement

Because this ordinance requires landscape installation in new developments and does not require tree preservation, it is fairly easy to enforce. The penalty for noncompliance is the withholding of the certificate of occupancy until the landscaping is installed. During adverse planting weather, other requirements apply. The Building and Zoning Director says the enforcement time commitment is minimal —essentially the time it takes for him to review plans and conduct the final inspection.

Assessment

The Building and Zoning Director says that the ordinance has been effective and is particularly pleased with the parking lot landscaping standards. The ordinance is easy to understand and covers the important elements. The citizens generally believe that the ordinance has been positive for the city and are complimentary of developers who install more than the minimum required landscaping.

Future Plans

The city has set a goal to develop a tree preservation ordinance which will require builders to retain existing trees (rather than clearing the site and adding landscaping after development). The goal is to protect the city's larger trees, which add to the city's charm.

Conclusion

Newberry's ordinance was drafted and adopted in three months time. Because the citizens are protective of the appearance of the city, community support coalesced behind the ordinance in response to one development. The

city will soon add a tree protection ordinance, strengthening the city's commitment to preserving its natural beauty in addition to its historical character.



Citizens say this “sea of asphalt” sparked interest in a landscaping ordinance.



New development exceeding minimum landscaping regulation.

To see the ordinance, please see Appendix A.

Tree Protection Ordinances

Tree protection ordinances are often adopted in fast-growing areas to prevent the wholesale clearing of lots and its consequences—increased dust and noise, accelerated runoff and erosion, lack of buffering and a loss of shade. For the purposes of this study, the two factors for labeling as a tree protection ordinance were: (1) some existing trees require preservation, usually managed through a development permitting process; and (2) physical tree protection measures are required for trees to be retained during construction. The ordinances primarily regulate commercial development, though in some cases, residential development is included. Trees are often granted protected status based on size, native or rare species, or historical significance, or some combination of these factors. The terminology varies from community to community—trees may be labeled significant, grand, protected, trophy, or landmark, for example. Permits are often required for their removal, and tree surveys are required during the permitting process.

This study's definition of a tree protection ordinance varies somewhat from the International Society of Arboriculture's "tree protection ordinances," which "are primarily directed at providing protection for native trees or trees with historical significance." This study's designation requires preservation of existing trees and includes ordinances that provide protection for a broader range of trees. Moll and Ebenreck's (1989) definition of "preservation ordinances" corresponds to this study's definition: "regulates the cutting of trees within a given jurisdiction. Most come with some sort of diameter or height specifications.... Some regulate only public property, while others regulate both public and private property" (p. 300). Martus, Haney, and Siegel's (1995) definition of "tree protection ordinances" is limited to "trees on private forestland associated with land clearing and development" (p. 29). The Urban Forestry South website states that tree protection ordinances "will often set standards for tree protection or replacement on construction sites."

Whether they are called tree protection, tree preservation, or tree conservation ordinances, these ordinances are intended to limit the removal of existing trees. According to a book produced by the National Association of Home Builders and the conservation organization American Forests (Petit, Bassert, & Kollin, 1998), “the best tree conservation ordinances focus on minimizing the negative impacts of construction and improving the local environmental and aesthetic resources” (p. 65). Tree protection ordinances are especially geared to construction activities, and may limit the number and types of trees that may be removed during construction, specify tree protection measures, and mandate replacement. They may also specify the minimum number of trees needed on a property after development through calculations such as the minimum density factor (Columbia) and the basal area calculation (Georgetown County).

Urban Forestry South’s *Urban Forestry Manual* lists several ways to ensure compliance with tree protection ordinances. One of the more common ways is to require tree removal permits and/or to withhold or revoke a building permit for non-compliance. Withholding the certificate of occupancy pending compliance or mitigation is another option. If it is not planting season or if the jurisdiction wants to assure the continued viability of the installed trees and landscaping, a performance bond may be required. As a last recourse before legal enforcement, a stop work order may be issued for violations. Finally, the jurisdiction can issue a citation for the violation, which is most often treated as a misdemeanor carrying fines.

Some land development regulations require tree retention in order to be approved; yet when individual lots in the development are sold, there is no legal obligation of the property owner or the builder to retain the trees. Opponents of the ordinances claim that tree preservation adds several thousand dollars to a home’s cost. Under this scenario, if tree preservation does increase the cost of the undeveloped lot, and it then is cleared by a different builder after the land development has been reviewed and approved, the clearing is no longer regulated. The homeowner, in effect, pays three times – for the vegetated lot

cost, then the costs of clearing the land, and finally, as homeowners generally want trees, the costs for planting new trees.

Overall, 64 jurisdictions in South Carolina have tree protection ordinances. Twelve of the 22 reviewed county ordinances were tree protection ordinances, with six also requiring parking lot landscaping and one requiring trees in residential developments (York County, in traditional neighborhood design developments). Out of the fifteen most populous counties, eight had tree protection ordinances, one had a tree protection ordinance pending, and the other six counties had landscaping ordinances.

Of the 81 reviewed municipal ordinances, 52 were tree protection ordinances (64 percent). Eighteen of these ordinances also required parking lot landscaping, and ten contained street tree provisions. Of the ten South Carolina municipalities with 2000 U.S. Census populations over 30,000, nine had tree protection ordinances—the tenth municipality (the City of Florence, see following paragraph), has a tree protection ordinance pending. An interesting fact is that the Town of Summerville has one of the oldest tree protection ordinances in the United States.¹

There are several municipalities and counties which may soon have tree protection ordinances. The City of Newberry, which has a landscaping ordinance, plans to have a tree protection ordinance by the end of the year. York County has a clause in its tree protection ordinance² allowing its municipalities to opt into the county's ordinance. While no municipalities have signed the contract since the ordinance was adopted in January of 2000, it is expected that some of

¹ From the Town of Summerville's website (www.summerville.sc.us, History section):

Modernization came to town with the arrival of the railroad in the early 1800's and led the village to incorporation. Trees were being cut in large numbers for laying rails and the clearing of lots to relocate the commercial center near the tracks. To protect Summerville's biggest asset, the village became an official town in 1847, passing a first law prohibiting the cutting of certain-sized trees without permission, and fining offenders a then hefty \$25. That ordinance, one of the oldest of its kind in the United States, is still on the books.

² "The provisions of this chapter shall apply to all new commercial, industrial, or multi-family site plans, and all single-family residential lots as defined...[to] those municipalities which by executed written agreement contract with York County to have these provisions administered within their corporate limits."

the county's smaller municipalities will in the near future.³ Florence County also has a tree protection ordinance pending. As the county and six of its municipalities (Florence, Johnsonville, Olanta, Quinby, Scranton, and Timmonsville) share a Consolidated Zoning Ordinance (effective April 19, 1999), the ordinance, when adopted, will apply to all zoned areas in the county and six municipalities. The Town of Bluffton has a revision of its tree protection ordinance under development.

For the purposes of this study, South Carolina's municipalities were divided into three roughly equal groups based on population (see below). These ranges were labeled Municipalities with Fewer than 600 Residents, Municipalities with 600 to 2999 Residents, and Municipalities with 3000 or More Residents. Representative ordinances are included for each category of municipalities. A representative county ordinance is included as well.

Municipalities with Fewer than 600 Residents

- 91 municipalities
- 25 responded (66 unknown)
- 6 had some type of tree ordinance
- 3 were tree protection ordinances (McClellanville, Briarcliffe Acres, Pinewood)

Municipalities with 600 to 2999 Residents

- 92 municipalities
- 28 responded & 3 were identified online (61 unknown)
- 18 had some type of tree ordinance
- One pending ordinance in Pine Ridge
- 12 were tree protection ordinances (2 of these required parking lot landscaping)

Municipalities with 3000 or More Residents

- 86 municipalities
- 67 responded & 3 were identified online (16 unknown)
- 57 had some type of tree ordinance
- 37 were tree protection ordinances (16 of these required parking lot landscaping)
- Largest municipality with unknown ordinance status: City of Laurens (pop. 9,916)
- Confirmed that the Isle of Palms does have an ordinance. Not able to obtain or review a copy of it (not included in totals).

³ Per communication with Planning Director, 7/31/03.

For more information:

- International Society of Arboriculture. *Guidelines for Developing and Evaluating Tree Ordinances*. Available at:
<www.isa-arbor.com/tree-ord/>
- Martus, C.E., Haney, Jr., J.L., & Siegel, W.C. (1995). Local Forest Regulatory Ordinances. *Journal of Forestry*, 93 (6), 27-31.
- Moll, G., & Ebenreck, S. (eds). (1989). *Shading Our Cities*. Washington, D.C.: Island Press.
- Petit, J., Bassert, D.L., & Kollin, C. (1998). *Building Greener Neighborhoods: Trees as Part of the Plan* (2nd ed.). Washington, D.C.: American Forests & Home Builders Press.
- Urban Forestry South. Urban Forestry and Public Policy. In *The Urban Forestry Manual*. Available at:
<www.urbanforestrysouth.org/pubs/ufmanual/publicpolicy/index.htm>

Table 10. Tree Protection Ordinances Reviewed

<i>Counties (12 of 46, 26%)</i>		
County	Population	Citation
Beaufort	120,937	www.municode.com (§ 106-1157, 106-1158, 106-1782, 106-1846, 106-1907)
Charleston	309,969	www.charlestoncounty.org/index2.asp?p=/departments/Planning/ZLandDevReg.htm (§ 8.8.1; 9.4.1 to 9.5.3; 11.6.1 to 11.6.2)
Colleton	38,264	www.colletoncounty.org/section4.pdf (§ 4.5-1 to 4.5-7)
Dorchester	96,413	“Tree Protection” (§ 8.4.1 to 8.4.2)
Georgetown	55,797	“Article XI: Tree Regulations” (§ 1100 to 1106), “Appendix A”
Horry	196,629	www.municode.com (§ 527.1 to 527.4)
Kershaw	52,647	“Tree Protection” (§ 6-5.1 to 6-5.5)
Lancaster	61,351	www.municode.com (§ 11.14; 12.1 to 12.14; 22.1, 22.5, 22.6)
Lexington	216,014	www.municode.com (§ 14-111 to 14-155)
Richland	320,677	www.amlegal.com (§ 27-1.1 to 27-9.7)
Sumter	104,646	“Section D: Landscaping Standards”
York	164,614	www.amlegal.com (§ 155.530 to 155.539; Appendices)
<i>Municipalities (52 of 269, 19%)</i>		
Municipality	Population	Citation
Aiken	25,337	www.aiken.net/zoning/COA_ZO_11-25-2002.pdf (§ 4.6.1 to 4.6.9)
Awendaw	1,195	<i>Unified Development Ordinance</i> (§ 7.1.1 to 7.1.2; 8.1.1 to 8.3.2)
Beaufort	12,950	www.cityofbeaufort.org/planning/zoning_ord/7GeneralDevelopmentStandards.pdf (§ 7.3)
Bluffton	1,275	“Tree Protection Standards” (§ 4.14.1)
Briarcliffe Acres	470	<i>Town Code</i> (§ 7.101 to 7.103)
Camden	6,682	<i>Municipal Code</i> (§ 100.01 to 100.99; 157.085 to 157.090)
Cayce	12,150	“Article 10: Appearance, Buffering, Screening, Landscaping, and Open Space Regulations” (§ 10.1-1 to 10.5-7)
Charleston	96,650	www.municode.com (<i>Charleston Zoning</i> , § 54.325 to 54.343)
Chesterfield	1,318	<i>Chesterfield Town Code</i> (§ 15.421 to 15.453)

Clinton	8,091	www.ci.clinton.sc.us/building_zoning_clinton_sc/clinton3.pdf (§ 3.19 & 3.20)
Columbia	116,278	www.columbiasc.net/citygov/landscapeordinance.htm
Conway	11,788	www.cityofconway.com/planning/zoning/index.htm (§ 11.1000 to 11.1115; also "Tree Preservation Ordinance" not available online)
Darlington	6,720	<i>Code of Ordinances</i> (§ 5-8001 to 5-8009), "Tree Protection" (§ 6-5.16-5.6)
Edisto Beach	641	<i>Code of Ordinances</i> (§ 86-250 to 86-260)
Folly Beach	2,116	www.amlegal.com (§ 93.01 to 93.99)
Forest Acres	10,558	<i>Zoning Ordinance</i> (§ 21.152)
Georgetown	8,950	www.municode.com (§ 20-80 to 20-89; 1400 to 1409)
Greenville	56,002	www.municode.com (§ 19-351 to 19-362; 50-271 to 50-280)
Greer	16,843	<i>Zoning Ordinance</i> (§ 6:9.8 to 6:9.18), <i>Land Development Regulations</i> (§ 12.1 to 12.10)
Hanahan	12,937	<i>Municipal Code</i> (§ 903.1 to 903.3)
Hartsville	7,556	www.municode.com (§ 86-256 to 86-262; 86-321 to 86-324; 86-351 to 86-360)
Hilton Head Island	33,862	www.rapidregs.com (§16-3-401 to 16-3-409; 16-6-401 to 16-6-407; 16-8-106)
Irmo	11,039	www.vismor.net/client_links.htm (<i>Town of Irmo Zoning Ordinance</i> , § 4-1.1 to 4-5.7)
James Island⁴	15,879	See note below
Kiawah Island	1,163	<i>Architectural Review Board Standards and Guidelines</i>

⁴ The Town of James Island incorporated May 21, 2002. At the time this research was conducted, the town's website included the text of Emergency Ordinance 02-8, which read that "The Zoning Ordinance of Charleston County, South Carolina, Ordinance No. 12-02 adopted on November 20, 2001, and as subsequent amendments are made is hereby adopted by reference and declared to be as fully a party of this Ordinance as if set forth herein. The Subdivision Regulations of Charleston County, South Carolina, adopted on November 20, 2001 and as subsequent amendments are made, are hereby adopted by reference and declares to be fully a part of this Ordinance as if set forth herein. The Ordinances are intended to serve as interim ordinances pending the adoption of permanent ordinances by the Town." This ordinance was passed by Town Council July 30, 2002. For the purposes of this study, James Island was considered to have a tree protection ordinance because Charleston County had one in effect at that time as a part of the above-referenced zoning ordinance.

Lexington	9,793	www.lexsc.com/landscape.html
Loris	2,079	<i>Unified Zoning & Land Development Ordinance</i> (§ 4-5.1 to 4-5.6)
McClellanville	459	"Article IV: Tree Preservation"
Meggett	1,230	<i>Zoning and Land Regulations</i> (§ 9.1 to 9.2)
Moncks Corner	5,952	<i>Moncks Corner Code</i> (§ 16-101 to 16-130)
Mount Pleasant	47,609	www.amlegal.com (§156.220 to 156.230)
Mullins	5,029	"Tree Protection" (§ 16.35.050)
Myrtle Beach	22,759	www.cityofmyrtlebeach.com/treelaws.html and www.municode.com (§ 910.1 to 910.16)
North Charleston	79,641	www.municode.com (§ 6-14 to 6-16)
North Myrtle Beach	10,974	www.municode.com (§ 23-67 to 23-71)
Orangeburg	12,765	<i>Orangeburg Municipal Code</i> (§ 24-9.5)
Pendleton	2,966	"Building Permit Required" (§ 302), "Application for Building Permit" (§ 303.1), and "AF, Agriculture-Forest District" (§1210)
Pinewood	459	"Tree Protection" (§ 722.1 to 722.6)
Port Royal	3,950	www.municode.com (§ 20-1 to 20-34)
Rock Hill	49,765	www.municode.com (§ 28-1 to 28-94), http://166.82.30.12/plnning/pdf_files/land_devel/LAND_REGS.pdf (§10-1 to 10-8)
Simpsonville	14,352	www.simpsonvillesc.com/Assets/pdf/Simpsonville_Zoning_Ords.pdf (§ 10:5.1 to 10:5.6)
Spartanburg	39,673	www.municode.com (§ 21-1 to 21-87)
St George	2,092	St. George Zoning Ordinance (Chapter 4)
Sullivan's Island	1,911	"Article X. Tree Protection Article" (§ 21-77 to 21-89)
Summerton	1,061	"Tree Protection" (§ 733.1 to 733.6)
Summerville	27,752	www.municode.com (§ 32-324)
Sumter	39,643	"Section D: Landscaping Standards"
Surfside Beach	4,425	<i>Zoning</i> (§ 17-367 to 17-368)

Tega Cay	4,044	www.municode.com (§ 22-101 to 22-116; Appendix A 19-451 to 19-454)
Walterboro	5,153	<i>Walterboro City Code</i> (§ 19.101 to 19.301)
West Columbia	13,064	"Landscaping Regulations" (811.1 to 811.11)
York	6,985	www.municode.com (Appendix A, Section XIII)

Tree Protection Ordinance Case Study: Town of McClellanville
(Municipality with Fewer than 600 Residents)



McClellanville's tree-lined Pinckney Street.

Introduction

McClellanville is a small coastal town (pop. 459) located in the northern part of Charleston County. In addition to its seafood and timber, the town is known for its sleepy fishing village atmosphere, beautiful old homes, and gorgeous live oaks. McClellanville gained some notoriety for its brush with Hurricane Hugo in 1989, reporting a storm surge of 16 feet and damage of approximately \$7 billion. The town has since recovered and has enacted a zoning ordinance that includes stringent tree protection regulations.

The Ordinance

McClellanville has a simple, six-page ordinance entitled "Tree Preservation" (Article IV) that was adopted as part of its 1993 zoning ordinance. The ordinance encompasses trees on public and private property, in both commercial and residential districts. All trees 24 inches or greater DBH are deemed "significant trees," and trees of 8 inches or greater DBH are protected within the lot's border area. In the lot's interior, either 160 inches DBH per acre or twenty trees per acre shall be maintained. The town has made efforts to contact real estate agents, contractors, and property owners by mail to notify

them of the tree protection ordinance. Information on tree protection is also disseminated with building permit applications. Clearcutting is prohibited, although bona fide timber harvesting is exempted.



Public park in McClellanville.

Administration

Although a landscaping plan is not required, a tree protection plan must be submitted to the Zoning Administrator prior to obtaining a building permit.

Enforcement

The Zoning Administrator and the Building Official enforce the ordinance. They continue to work towards a more proactive approach to tree protection so that actual violations may eventually be reduced through education about the ordinance. Decisions of the officials may be appealed to the Board of Adjustment. When actions come under the Board of Adjustment purview, the Board may require remedial actions such as replacement of removed, damaged, or dead trees, or increased protection of trees during construction.

Residents generally report violations. Violations of the tree ordinance are misdemeanors for which penalties can run to a maximum of two hundred dollars per day or thirty days in jail. The municipal court is just beginning to expand its case type beyond parking violations, so at present, no cases regarding trees have been litigated. Additionally, permits may be revoked or withheld (including certificates of occupancy) for non-compliance.

Assessment

The ordinance is considered progressive for a small jurisdiction; however, its benefits have not been completely realized because active enforcement has been difficult with limited staff. Without a strong enforcement effort and a supportive judicial system, tree regulations do not take on the significance of other regulations. Also, the ordinance's language could be clarified, especially with regard to the interiors and borders of lots.

The most striking provision of this ordinance is the replanting schedule for trees removed in violation of the ordinance. For protected trees (8 inches or greater), 80 inches or greater DBH must be replanted per acre, half of which must be 4 inches or greater DBH. For significant trees removed in violation of the ordinance, the combined DBH of replacement trees must be at least 3 times the DBH of the removed trees (or the largest transplantable DBH available). This provision is expected to cause people to seriously consider their actions.

Future Plans

With the help of the Berkeley-Charleston-Dorchester Council of Governments, McClellanville is in the process of updating the zoning ordinance. An early draft of the proposed ordinance clarifies the language of the original ordinance and includes the designation of historic trees, defined as those trees listed on the national Register of Historic Places. The removal of historic and grand trees (76 inches or greater circumference at breast height) is prohibited. The proposed ordinance also includes a provision stating that "[the] platting of lots and roadways where a Grand Tree will be located at or near the center of a

lot shall be restricted.” The zoning ordinance changes will most likely come before council next year.

Conclusion

According to the Zoning Administrator, citizen support and participation has been crucial to the success of the ordinance. In addition, awareness of the importance of tree protection is growing. A dedicated, 12-member, volunteer urban forestry committee serves the town. This committee has been active in planting and watering trees and in soliciting donations. Currently, there is an effort by the committee to complete a tree inventory. With the high level of volunteer commitment, the development of a new tree protection ordinance, and plans to conduct a tree inventory, McClellanville is a positive example of a community committed to its trees.



An example of McClellanville’s significant trees.

To see the ordinance, please see Appendix A.

Tree Protection Ordinance: Town of Bluffton

(Municipality with 600 to 2999 Residents)

Introduction

Bluffton (pop. 1,275) is located in southern Beaufort County and graced with lowcountry architecture and stately live oaks. It features a one block “commercial district” with a few outlying commercial strip centers. This “Old Town” section is the original one square mile of Bluffton and encompasses the Historic District. The additional 46 square mile area that was annexed by the town in the last several years is known as “New Town.” The recent addition was Union Camp timberland and is currently being developed into residential subdivisions. Bluffton is experiencing considerable development pressures due to its proximity to Hilton Head Island and Savannah.



A view of the May River in Bluffton.

The Ordinance

The first tree protection ordinance in Bluffton was written by volunteers and adopted in 1994. It was later revised by the Lowcountry Council of Governments, and is once again under revision by a group of volunteers working with the town’s certified arborist. The committee has reviewed several ordinances, including Hilton Head’s and Beaufort County’s. To this point, the

process has taken approximately 6 months and included 6 citizen meetings. When the draft is completed, it will be reviewed by a committee of tree professionals, developers, and tree advocates. There will be a comment and answer period before the ordinance goes before the Planning Commission. Following review by the town's lawyer, the ordinance will come before Town Council.

The ordinance revision was proposed in response to several factors, the most important of which is the town's recent expansion. The town now encompasses several ecosystems which may not be well served by the current ordinance. Also, recent violations of the ordinance have made the need for a mandated replacement schedule clear. Finally, it was acknowledged that replacement of removed trees on site is not always feasible, so the town staff wanted to outline options for alternative compliance.

Bluffton's ordinance applies to trees on private property and includes residential lots in the Old Town section. Landscaping plans are required of all developments in the town, but tree surveys are only required of developments in the Old Town. Twelve species of trees are given protection as "endangered or valued trees," and the ordinance also names 16 species by size as "Significant Trees" (including 5 from the "endangered or valued trees" list). A minimum of 15 trees, 8 inches or greater DBH, is required for every acre of land disturbed during construction. Landscaping in parking lots is recommended, but not required.

The existence of the tree protection ordinance is generally well-known. Developers often assume that Bluffton has a tree protection ordinance because many of them have worked in Beaufort County or Hilton Head Island before beginning developments in the Town. Tree professionals learn of the ordinance from the planning department when they apply for a Bluffton business license. Interestingly, business licenses are processed by the planning department. Most citizens are aware of the ordinance because the local newspaper periodically addresses it. The planning staff also intends to develop an informational pamphlet about the ordinance.

Administration

Due to its recent annexations, Bluffton has an interesting administrative arrangement, where several ordinances apply in either the New Town or the Old Town, but not both. Consequently, while New Town developments are required to submit only landscaping plans, developments within the one square mile Old Town are required to submit landscape plans and tree surveys. The planning department (which includes a certified arborist) reviews these plans for compliance with the ordinance. The Board of Zoning Appeals hears appeals to the tree protection ordinance.

Enforcement

The town currently does not write tickets for unauthorized tree removal. When residents call in violations, the planning staff will send a letter to the property owner requiring mitigation. Penalties for violations of the ordinance are not specified, but if the violation goes to court, fines of up to \$500 could be assessed. The ordinance does not specify a replacement ratio for trees removed in violation of the ordinance.



Street trees in Bluffton.

Assessment

Although Bluffton's ordinance is very thorough, there are ways the ordinance provisions could be fine-tuned. There is some concern that the ordinance does not include all native trees in its preservation requirements. Also, by not establishing replacement guidelines with regard to which species can be planted, it fails to protect on-site diversity. In other words, a parcel could be replanted with just one species. Currently, there is no replacement ratio established. The ordinance also includes a suggestion, but not a requirement, to locate replacement trees in parking lots.

A significant problem with the ordinance is that it does not apply to the town's many Planned Unit Developments (PUDs) that have development agreements that were executed under Beaufort County's 1990 tree protection ordinance, before the land was annexed into the town. It is expected that the ordinance will need to be expanded to the New Town areas as time goes by.

The ordinance's strength is its detailed tree protection, establishment, and maintenance guidelines. All trees 8 inches or greater DBH (and some smaller trees) are protected, and there is no distinction made between commercial and single family properties with regard to tree preservation. Thorough tree protection measures are outlined. Although the ordinance gives the applicant some flexibility, the ordinance is quite clear in the requirement for a final density of 15 trees per acre.

Future Plans

Bluffton's immediate goal is to complete the tree protection ordinance revision. A draft of the new "Native Vegetation and Tree Protection" ordinance adds definitions, breaks down the provisions into subsections, and increases the minimum number of trees from 15 to 20 per acre. Additionally, a comprehensive "Preferred Tree List" has been developed that shows scientific and common names of species, which trees are native, and which trees are tolerant of urban settings. The new ordinance also addresses mitigation for removed trees by establishing a replacement schedule and outlining 3 choices for their

replacement. The options given are: (1) replant on site using no more than 30 percent of any one species, (2) pay into the town's tree fund for installing public trees, or (3) relocate trees to public parks. The town is also investigating the prospect of developing an urban forestry program and creating a Tree Board.

Conclusions

Bluffton's current tree protection ordinance has stringent requirements for tree retention, protection, planting, and maintenance. The need for a coordinated approach to urban forestry is clear as the town seeks to unify the older historic district with the annexed areas. A new ordinance that applies to both equally should help in the establishment of the urban forestry program. The ordinance in development remedies many of the concerns of the current ordinance and creates a stronger framework for urban forestry in Bluffton.



A live oak bends gracefully over a Bluffton street.

To see the ordinance, please see Appendix A.

Tree Protection Ordinance Case Study: Town of Sullivan's Island
(Municipality with 600 to 2999 Residents)

Introduction

Sullivan's Island is located just off the South Carolina coast, north of Charleston Harbor. Primarily a residential community, the island has a small commercial area and continues to maintain its small town character (pop. 1,911). New development is limited because the island is substantially built-out. Renovations or expansions, the major source of current building activity, are subject to the town's tree protection requirements.

The Ordinance

The town has a concise four-and-a-half page tree protection ordinance which was adopted in 1991 and last amended in 2001. The ordinance was a response to Hurricane Hugo, during which a major portion of the town's tree canopy was destroyed. Tree Commission volunteers with the help of a state regional urban forester wrote the town's ordinance. Citizens were supportive of the ordinance and town council passed it with a unanimous vote.

The ordinance applies to all trees 6 inches or greater DBH on both public and private property and in all zoning districts. A tree replacement plan is required as a part of the application for a tree removal permit, which in turn is required as a part of the building permit. While some communities exempt residential areas from tree requirements, Sullivan's Island does not. Required tree replacement is based on the combined DBH of the trees removed, with only certain types of trees having to be replaced in kind.

Administration

Sullivan's Island's ordinance has an interesting administrative arrangement in that the Tree Commission and the Zoning Administrator share responsibilities. The Tree Commission has authority over "Protected Trees" (trees with a DBH 6 inches or greater and less than 16 inches) and "Significant Trees" (trees with either a DBH of 16 inches or greater or a height of forty feet).

On average, two removal requests are heard by the Tree Commission each month. The Zoning Administrator has authority over the removal and replacement of Sabal palmettos. The Zoning Administrator has delegated some tree protection oversight to the Building Official because the Building Official makes daily on-site visits around town, enabling somewhat regular vigilance. According to the ordinance, decisions of the either the Zoning Administrator or the Tree Commission may be appealed to the Board of Zoning Appeals, but no appeals have been made yet. The Building Official estimates administering the ordinance costs about \$4000 per year, based on personnel time and mail-outs to residents.



A front yard on Sullivan's Island.

Enforcement

As with many small municipalities, enforcement is a challenge. Infractions are generally discovered either by the Building Official in the course of his daily inspections around town or by residents reporting violations. Violations of the ordinance result in fines up to five hundred dollars or thirty days in jail, or both, in addition to tree replacement.

The residents of Sullivan's Island take their tree protection seriously. In a recent case, a large section of beach frontage was essentially clear-cut in front of

two waterfront homes in violation of an ordinance that prohibits tree removal on publicly-owned dunes. Neighbors quickly reported the violations to the town, which is still in the process of investigating the matter (the homeowners deny involvement in the cutting). One council member described the clearing as “the most egregious” act of tree removal in the seven years⁵ since the town passed this ordinance. This unauthorized clearing could result in fines up to \$102,000.



The Town of Sullivan’s Island’s deed-restricted dune area.

Assessment

Sullivan’s Island’s ordinance is well written and easily understood. According to the Building Official, citizens seem satisfied with the ordinance and are quick to report violations. The ordinance’s strengths are in its protection of all tree species and in its required replacement of most removed trees. However, the species and sizes that can replace a removed tree need to be specified. An additional concern with the current regulation is that while a pine tree of 6 to 16 inches DBH requires a permit from the administrator and replacement, the Tree Commission may not necessarily require tree replacement for the removal of a tree larger than 16 inches DBH. This potentially leads to a situation where a person might wait until an already large pine is just large enough (16 inches) to

⁵ Quick, D. (2003). Cutting of trees in town dunes prompts Sullivan’s investigation. *The Post and Courier*. Available at: <http://charleston.net/stories/011103/loc_11sullivans.shtml>

apply to the Tree Commission, and the Tree Commission might approve removal of the tree without requiring replacement.

Future Plans

Sullivan’s Island’s future tree-related plans involve a shift from protecting trees during construction to managing the urban forest. An amendment is under discussion to exclude pine trees from protected status. In addition, there has been mention of a landscaping ordinance that prohibits heavy landscaping which obstructs the neighbors’ breezes and hides the house from the street. Finally, in the coming year, the town plans to increase awareness about the ordinance with a flyer mailing and with a posting on the town’s website.

Conclusion

Although the island has a rather restrictive ordinance, it is not council’s intention to prohibit all tree removal. The town officials’ interest is in reasonable, orderly tree removal and in tree replacement. The tree protection ordinance is generally considered successful because of this flexibility and its success in restoring the tree canopy.



Street trees on Sullivan’s Island.

To see the ordinance, please see Appendix A.

Tree Protection Ordinance Case Study: Town of Hilton Head Island
(Municipalities with More than 3000 Residents)

Introduction

Hilton Head Island incorporated in 1983 and passed its first tree ordinance in 1985. The ordinance upon which the current version is based was passed in 1987, as part of a comprehensive Land Management Ordinance. The Land Management Ordinance was a step towards preserving Hilton Head's character and ecological integrity in the face of increasing development pressures. Today, in addition to the international reputation as a vacation destination, the town has a well-known reputation for its commitment to maintaining the island's natural resources and quality of life.



An example of retained trees in a parking lot on Hilton Head Island.

The Ordinance

The current tree protection component of the ordinance was written in 1986 as a response to residents' concerns over clearcutting for development and the lack of landscaping in parking lots and other built areas. It was developed by

the Natural Resources Advisory Task Group, a committee of approximately 12 citizens, including representatives of Town commissions and staff. The ordinance was adopted less than a year after the committee began working on it. The tree protection standards apply to trees on public and private property with the exception of single family lots.

Hilton Head's ordinance is straightforward in its requirements. In addition to calling for tree preservation and protection, the ordinance calls for preservation of native shrubs and other native understory plants on all property except single-family lots. The percentage of specific types of vegetation and trees on a site prior to construction must be maintained or reestablished after construction. This diversity must be demonstrated using the required landscaping plans and tree surveys. The ordinance also specifies minimum standards of tree coverage required (in inches of trees per pervious surface acre) for all types of developments, so that developers know what is required of them before they apply for a building permit. An amendment is pending that would provide specific protection for specimen trees by requiring a variance for their removal.

Hilton Head Island's ordinance is well-known in and outside of South Carolina. Many jurisdictions from all over the country have requested copies of the ordinance, and several jurisdictions in South Carolina reviewed it while researching their tree ordinances. Developers new to Hilton Head Island hear about the ordinance through word of mouth or seem to assume Hilton Head will have an ordinance. There are also brochures about the ordinance produced by the Natural Resources Division of the Planning Department available at Town Hall and on the website (www.ci.hilton-head-island.sc.us/Depts/plng/natresrc.html).

Administration

The ordinance is primarily administered by the planning department, who review plans for compliance with the ordinance. The Natural Resources Administrator reviews commercial site plans and subdivision plans, and may review residential lots upon neighborhood request. For single-family lots, the neighborhoods' Boards of Architectural Review have oversight. Appeals of the

planning staff's decisions are heard by the Board of Zoning Appeals, although at this point, no decisions have been appealed.

Enforcement

The Natural Resources Division and the Code Enforcement Department enforce the ordinance. Citizens are important in the enforcement process; they not only report violations, they also tend to report problems or potential problems before they become violations. Staff tries to work with violators to remedy problems, though if necessary, tickets may be issued by the Code Enforcement Officer and violators may be taken to court. Violations of the tree protection ordinance are misdemeanors, with fines of approximately \$1000 per tree and a required inch-for-inch replacement based on the city's prioritization of trees.



An overhead view of a hotel parking lot on the island.

Assessment

According to the Natural Resources Administrator, the citizens likely would say that the ordinance has been effective, and she concurs, noting that the ordinance supports air quality protection and control of ground level ozone. The ordinance also specifically protects native species and seeks to maintain the

natural diversity present on a site by requiring the in kind replacement of trees or vegetation. This diversity is beneficial for habitat protection and wildlife vitality. The ordinance's real strength is that it establishes quantitative guidelines for tree retention and replacement, making it difficult to dispute or misinterpret.

Future Plans

As the island moves toward build-out, the protection of natural resources will become more and more important. The town is currently updating the ordinance to call for inch-for-inch replacement of illegally removed or damaged trees, regardless of the type of tree. This revision is expected to go before Town Council in late summer or early fall 2003.

In recent years, the town has been engaged in an aggressive land purchase program to preserve areas of open space. On an annual basis, the Natural Resources Administrator lists critical environmental land which may be considered for purchase by the Town Council.

The town will soon start using CITYgreen computer software to assess how effective tree and landscaping requirements have been. Using late 1970s infrared photos, the town will establish baseline vegetation data and determine if and where urban heat island effects were occurring then. Next, the study will use more recent photographs to compare areas that have remained unchanged to those developed subject to the tree protection requirements. The data will then be used to quantify the benefits of trees and vegetation in terms of stormwater mitigation and energy savings, among other factors. The software will also be used to age current trees and landscaping into the future to quantify its potential benefits. This study will be used to revise the town's ordinances if necessary.

Conclusions

The Town of Hilton Head continues to set a strong example for natural resource protection in sensitive environmental areas. The Town is committed to protecting these resources and the character of the island, and has reinforced this desire with an ordinance protecting trees as well as other native vegetation.



Lodging on Hilton Head Island.



Hilton Head Island's
Town Hall.

To see the ordinance, please go to the Rapid Regs website (www.rapidiregs.com) > *Hilton Head Island, SC Land Management Ordinance*, §16-3-401 to 16-3-409; 16-6-401 to 16-6-407; 16-8-106.

Tree Protection Ordinance Case Study: City of Myrtle Beach
(Municipalities with More than 3000 Residents)



A public space in Myrtle Beach.

Introduction

Myrtle Beach has a permanent population of about 23,000 which swells exponentially during tourist season. Until recently, the Grand Strand area emphasized growth rather than growth management, and rapid development included the destruction of one of the area's precious resources, its trees. In response, the City of Myrtle Beach decided to increase its urban forest by passing comprehensive landscaping and tree protection ordinances. It has since added extensive streetscaping, and the citizens and tourists have noticed. Tree preservation is important to the residents of Myrtle Beach as they seek to enhance the city. Even the name Myrtle Beach recalls its natural resources—the city is named for wax myrtles which are prevalent in the area. The City of Myrtle

Beach is proud to have been awarded the Tree City USA status for the past six years, and the city also received the 2000 SC Chapter of the American Planning Association's Outstanding Planning Project Award for Small Jurisdictions for its "Greening the City Program".

The Ordinance

The impetus for the ordinance was a visioning process that the city facilitated in 1995. Residents were concerned over the appearance of their community and requested that city staff revise the existing tree protection ordinance. To this end, a 12-member Landscape Committee was appointed that included Planning Department staff, the SC Forestry Commission's regional urban forester, landscape professionals, local business owners, Planning Commissioners, Santee Cooper Utility Line Coordinator, a major land owner and developer, and local residents. The city felt strongly that all of the vested interests should be involved. Several public meetings were held in an effort to have citizen input, to create stakeholders in the process, and to reach general consensus on the ordinance.

In the development of the ordinance, the planning staff reviewed more than one hundred landscape and tree protection ordinances. They found the tree protection ordinance of Fulton County, Georgia, to be especially helpful, followed by those of Raleigh, N.C., and Charlotte, N.C. Several ordinances from South Carolina were reviewed, including those of Georgetown County, Mount Pleasant, Charleston, and Hilton Head Island. Information from the American Planning Association was also considered. The staff estimated that work on this ordinance took approximately 150 hours between meetings and research over the course of a year and a half.

After the ordinance was drafted, the Landscape Committee developed a "campaign" to get the ordinance passed. This campaign included identifying and organizing tree protection advocates, identifying target audiences, working with the media to promote the ordinance, and educating the staff, residents, and elected officials. The committee also developed an internal audit of potential

positive and negative results and reactions from the viewpoint of businesses, residents, and city staff. Challenges to be addressed included economic hardship, legal issues, and appearing inflexible during development review. The committee developed talking points to address these concerns. Positive outcomes were identified, including reduced stormwater runoff, decreased noise pollution, and increased property values.

The current tree protection ordinance was adopted in 1996 and last amended in 2000. The city also revised its landscape ordinance in 1999 which includes extensive requirements for parking lot landscaping. The landscaping ordinance is unique in that it requires all sites, new and old, to comply with the standards within a specified timeframe. The business community was generally supportive of the tree protection and landscaping ordinances, although there were concerns about losing parking spaces due to landscaping requirements. There are also occasional complaints from business owners who claim that the trees are blocking their signs. The general response from the city is to recommend that the property owner reposition the sign lower as the trees grow taller. Business owners are aware of the ordinance because anyone applying for a new business license is given a copy of the tree protection ordinance and required to sign an affidavit that they have received and understand it.

Myrtle Beach's ordinance has been well publicized both in and outside of Myrtle Beach. For citizens, the city has an informational rack in all city buildings, including several brochures on urban trees, some produced by the city and several by the South Carolina Forestry Commission. City staff have made presentations at conferences about this ordinance on at least two occasions. Several municipalities in South Carolina have requested copies of Myrtle Beach's ordinance with the aim of using it to revise or write their own ordinance. The City of North Myrtle Beach and Horry County are looking into coordinating their ordinances with Myrtle Beach's so that there is continuity in the area and to avoid clearcut areas next to the city limits.

Myrtle Beach's ordinance establishes definitive guidelines for tree retention, protection, and removal. The tree protection ordinance applies to

protected (several species and sizes) and landmark (ten species by size) trees on public and private property in all zoning districts. On single-family detached residential lots, the ordinance applies only to indigenous (one of four native species at a given size) and landmark trees. This is one of the distinguishing features of Myrtle Beach's tree protection ordinance—residential areas are not exempted. The ordinance also requires street trees to be planted in residential subdivisions and requires permits for the removal of protected trees. There are several conditions under which a tree removal permit will be granted for protected trees; however, there are only two conditions (trees are hazardous or diseased) allowing the removal of a landmark tree. Myrtle Beach also has a mitigation policy which specifies how removed trees will be replaced (both by number of trees and by DBH). Several pages of graphics help clarify the written definitions.

Currently, one amendment is pending and there is potential for the development of another amendment. The pending amendment would return pines greater than 12" dbh to the list of protected trees. Another amendment under consideration relates to the clearcutting on lots devoid of protected or landmark trees. Currently, if there are no trees of this type, a site can be completely clear-cut (albeit with landscaping required in the final development) without obtaining any tree removal permits. Citizens near areas that have been completely cleared in this manner are complaining of flooding in areas that never flooded before, suggesting a link to stormwater runoff issues resulting from this type of wholesale clearing.

Administration

During the conceptual review, which is required of all developments, the tree protection ordinance is cited. For the formal development review, a current tree survey is required as part of the landscaping plan. The plan is reviewed for compliance by the Landscape Code Enforcement Officer. When the plan is deemed compliant, it is sent to the Community Appearance Board (the city's Board of Architectural Review) which reviews it for aesthetics and may require

further changes. The Community Appearance Board, which includes a landscape architect, is committed to tree preservation. Appeals to the Administrator's decision are made to the Zoning Board of Appeals, and on average, two appeals are heard each year.

Enforcement

Violations are generally discovered by investigating citizens' complaints and by code inspection staff's active surveillance. Tickets are issued for violations and mitigation is required. Stop work orders are also considered as a last resort. While most violators provide mitigation, six cases have gone to court. Unfortunately, judges have dismissed all six cases.

Assessment

Although the tree protection and landscaping ordinances have contributed to beautifying the city, the staff has some concerns. According to the Code Enforcement Officer, the ordinance's definitions need clarification. The planning staff would like to see additional tree protection measures mandated before and during construction. Stronger tree preservation requirements are needed to retain landmark and protected trees. Additionally, parking lot landscaping should be required throughout the parking lot, not just at the perimeter. An increase in the percentage of landscaping required in parking lots (currently five percent) would provide more shading, particularly in large developments where large amounts of parking are provided.

Enforcement is a major concern of both the planning and the code enforcement staff. More staff time is needed due to the snowball effect of citations. Once a person is cited, they call in every violation they see, necessitating added investigations and enforcement actions. The ordinance has not been as successful as staff had hoped because it does not have strong judicial enforcement behind it. While the dismissals of tree protection violations may seem to undercut the ordinance, the fact that the Landscape Administrator will take cases to court gives respect to the effort.

The tree protection ordinance is clear in its requirements. The definitions of protected trees and landmark trees are detailed, and clear graphics accompany the text and help to clarify the written definitions but improvement is needed. Although tree protection measures generally and during construction are described, both the language and the enforcement need strengthening. Acceptable reasons for the granting of tree removal permits are specified and a tree replacement schedule is established. A key component to a successful ordinance is adequate staffing. In this case, there was a commitment from council for an additional staff member before the ordinance was passed.

Another strong provision of the landscaping ordinance is lenience in required parking lot landscaping in exchange for retaining existing trees. There is a requirement that every parking space be no more than fifty feet from a tree. For retained trees, the 50-foot radius is measured from the canopy edge, whereas with planted trees it is measured from the stem of the new tree. This distinction provides a financial incentive to retain existing trees. Developers tend to perceive the tree protection and landscape ordinances as a nuisance, but they generally comply. Citizens, on the other hand, are happy with the ordinance and offer compliments on the beautifying effect the ordinances have had on the community.

Future Plans

The city intends to work toward establishing a coordinated, multijurisdictional approach to urban forest management. Myrtle Beach enjoys friendly planning staff relationships with both the City of North Myrtle Beach and Horry County, and the three would like to coordinate their regulations to prevent distinct visual breaks at the jurisdictional borders. To eliminate clearcutting of lots that are due to be annexed into the city, Horry County and the City of Myrtle Beach need to work as allies.

The planning staff would like to see the city install more trees and use more trees to mitigate stormwater runoff. Planners would also like to include trees in the geographic information system. Finally, there is hope that the city will

consider hiring a certified arborist to supervise the tree planting and maintenance programs and the enforcement of the landscape and tree ordinances.

Conclusion

Since the passage of the tree protection ordinance, city government has demonstrated its commitment to beautification by increasing spending on street trees, thereby showing that rebuilding the urban forest is not just the task of the private sector. According to the Planning Director, the city should not ask its citizens to do more for trees than the city does. The city has come a long way in changing its image thanks in large part to the tree protection and landscape ordinances.

To see the ordinances, please go to the City of Myrtle Beach's website (www.cityofmyrtlebeach.com/treelaws.html) and to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Myrtle Beach Code of Ordinances*, § 910.1 to 910.16.

County Tree Protection Ordinance: Georgetown County



Parking lot landscaping and pedestrian access
in Georgetown County.

Introduction

Georgetown County (pop. 55,797) is located on the coast between Charleston and Horry Counties. It is home to the Port of Georgetown and the Baruch Foundation's Hobcaw Barony, a 17,500 acre wildlife refuge used by University of South Carolina and Clemson University for academic research. Georgetown is a popular retirement destination due in part to its natural amenities and its golf courses. To protect its abundant natural resources, the county has had a tree protection ordinance for several years and has been the inspiration for several other jurisdictions' ordinances.

The Ordinance

The current tree protection ordinance was passed approximately five years ago. It was developed by the county planning staff who researched ordinances from other communities. The ordinance applies to trees on private property in every zoning district including residential districts. The tree removal

permitting process, tree planting, maintenance guidelines, and tree replacement are addressed in the ordinance.

Tree surveys must be submitted to obtain development permits. The plan must indicate the size and species of existing significant and landmark trees and the proposed location of new trees. It must also include a basal area calculation for minimum tree requirements. The basal area formula, which is based on acreage and tree measurements, is explained in the ordinance's appendix. The calculation ensures that a minimum of fifteen square feet of tree basal area per acre is retained. If tree retention is not possible or if there are fewer than 15 trees initially, the applicant must plant at least 3 replacement trees of 2 inches DBH or greater per each square foot of basal area necessary. Mitigation measures for trees removed or lots clearcut without permits are also specified.

Administration

The ordinance is administered by the Zoning Administrator during the review of site plans. In addition to noting the trees proposed for removal and trees to be planted, the plan must include calculations which determine the minimum tree requirements based on acreage and tree measurements. The plan is required before a building or development permit is issued. The Zoning Administrator also issues tree removal permits. Appeals for denied tree removal permits are made to the Zoning Board of Appeals. At this writing, on average, there is one appeal regarding trees per year.

Enforcement

The Zoning Administrator also enforces the ordinance. Citizens' complaints and active surveillance aid the discovery of violations, and the Zoning Administrator writes tickets for violations. For significant trees removed without permits, three trees (minimum 2 inch DBH of a "significant" species) must be planted. If an area is clearcut without a development permit, it must be replanted at one tree for every 500 feet of open space. The Zoning Administrator may

withhold a certificate of occupancy if the development is not compliant with the approved landscaping plan.

Assessment

The Zoning Administrator notes that the ordinance has been effective, and seems to be fair. The required basal area calculation is somewhat tricky, but an ordinance appendix includes instructions for calculating the minimum tree requirements and makes it relatively easy to follow by working through an example. The appendix also contains graphics illustrating tree protection techniques and tree planting guidelines.

Conclusion

As one of the earliest jurisdictions in South Carolina to institute a tree protection ordinance, Georgetown County's ordinance has served as a model for other communities. The ordinance's requirements are detailed and clear regarding what is required for tree removal permits and tree protection measures. Georgetown County's ordinance is also notable because regulation of vegetation in residential areas is somewhat unusual in South Carolina. Given the intense development pressures, a strong ordinance in place will help protect this county's significant tree canopy.

To see the ordinance, please see Appendix A.

View Protection Ordinances

View protection ordinances protect a specified area from alterations by tree addition or removal. This designation is derived from Urban Forestry's South's definition of "view ordinances" which "regulate the planting and removal of trees in certain areas to protect the view." This definition differs from the International Society of Arboriculture's definition: "view ordinances are designed to help resolve conflicts between property owners that result when trees block views or sunlight." Some communities include tree-related view protection regulations in their Architectural Review Standards. These standards are frequently enacted under the authority of the Zoning Ordinance in order to preserve or enhance natural scenic areas or the unique or desired character of a defined area.

Three examples of view protection ordinances were reviewed. Of the 81 municipalities' ordinances reviewed, two municipalities (2 percent) had view protection provisions. Both municipalities, Central and Hardeeville, had ordinances which create overlay districts to protect specific highways. Only one of the 22 reviewed counties' ordinances (5 percent) had a view protection element—Lexington County's ordinance protects scenic roads that will be designated by the jurisdiction.

The Town of Central's "SC 93 Corridor Development Standards" establishes requirements for street trees, parking lots, and buffers along Highway 93. The ordinance calls for a "unified theme for street tree planting" on the public right-of-way and includes the species and spacing of these trees. Internal landscaping of parking lots is required, as are buffers along SC 93. Lastly, the ordinance requires the "preservation of existing trees on parcels as development occurs, in order to integrate natural wooded areas into the overall design of new projects." It is the authors' understanding that these standards continue the architectural review overlay efforts of the adjoining City of Clemson.

Similarly, the City of Hardeeville has established an overlay district for the Highway 278 Corridor. Highway 278, which begins in the City of Hardeeville and

ends on Hilton Head Island, “should be developed in such a way that does not threaten the unique aesthetic characteristics of the area.” The ordinance calls for a 25-foot wide landscaped buffer along the highway’s right-of-way, from which no tree 6 inches or greater DBH should be removed. Further, the ordinance prescribes a certain number of over- and understory trees and shrubs per segment of the highway “to achieve as nearly as practical a continuous vertical plane of canopy trees, understory trees and shrubbery within the highway buffer.” A list of acceptable highway buffer trees is included. The ordinance also covers access from highway, signage, and architectural design and materials.

Lexington County’s Landscape Ordinance has guidelines for “scenic corridors” which are roads of “unique character” within the county. Scenic corridors must be designated by the Planning Commission and approved by the County Council. The ordinance prohibits removal of canopy or understory trees within 25 feet of the corridor, and requires that all canopy trees 8 inches or greater DBH be preserved within the area 26 to 50 feet from the corridor. Finally, the ordinance gives the Landscape Administrator the responsibility to identify the areas along a scenic corridor lacking tree canopy and to require canopy trees to be planted or replanted in such areas in “an effort to retain the natural, tree-lined ambience of the scenic corridor.”

For more information:

- International Society of Arboriculture. *Guidelines for Developing and Evaluating Tree Ordinances*. Available at:
<www.isa-arbor.com/tree-ord/>
- Martus, C.E., Haney, Jr., J.L., & Siegel, W.C. (1995). Local Forest Regulatory Ordinances. *Journal of Forestry*, 93 (6), 27-31.
- Urban Forestry South. Urban Forestry and Public Policy. In *The Urban Forestry Manual*. Available at:
<www.urbanforestrysouth.org/pubs/ufmanual/publicpolicy/index.htm>

Table 11. View Protection Ordinances Reviewed

<i>Counties (1 of 46, 2%)</i>		
County	Population	Citation
Lexington	216,014	www.municode.com (§ 14-137)
<i>Municipalities (2 of 269, <1%)</i>		
Municipality	Population	Citation
Central	3,522	Ordinance Number 94-11-07
Hardeeville	1,793	www.municode.com (Appendix A, § 4.22)

View Protection Ordinance Case Study: Lexington County



A stretch of Corley Mill Road under consideration for scenic corridor designation.

Introduction

With a 2000 population of 216,014, Lexington County is the fifth most populous county in the state. Located just west of Columbia, it has experienced rapid growth, adding almost 50,000 people in the 1990s. As the county has developed, natural resource protection has become a greater concern for the county. In response, the county staff developed a landscape ordinance that was firm yet flexible. To add to its flexibility, the ordinance was crafted in six sections, each of which could be adopted separately. Because Lexington County Council has a single-member district format, only six of the nine districts adopted the ordinance, and all of the adopting districts approved all six sections.

The Ordinance

A landscape committee was formed to draft the ordinance. The committee included representatives from the planning department, state agencies, the Clemson extension office, the Forestry Commission, and the South Carolina Forestry Association. The committee used the Central Midlands

Council of Governments' model tree ordinance for guidance and reviewed other jurisdictions' ordinances, including those of Charleston and Georgetown Counties. Several jurisdictions' ordinances were reviewed for parking lot landscaping requirements. The process of drafting the ordinance took less than one month. The review, however, took six months, and it was a year and a half between the drafting to the ordinance adoption in 2000.

In addition to the population influx, two actions drove the development and subsequent adoption of the landscape ordinance. The first was that the Town of Lexington agreed to enforce the ordinance in an unincorporated area adjacent to the town, and the second was that the county's budget was written to include a Landscape Administrator for the first time. The ordinance became effective on January 1, 2001. The ordinance drew little public reaction, and although several of the area's Chambers of Commerce studied the ordinance, none opposed it. One developer voiced his opposition due to the anticipated added development costs.

The ordinance applies to commercial land in the unincorporated part of the county. Trees on public property are not covered by the ordinance because the county owns very little public land. The ordinance also does not apply to single-family detached housing units or duplexes, and forestry and agricultural activities are exempted. A landscaping plan is required of commercial developments and residential developments of three or more attached units. The landscape plan must include a tree survey, marking the trophy trees and trees to be planted.

The ordinance covers three main elements—general landscaping and tree preservation, parking lot landscaping, and scenic corridor specifications. Landscape plans are required, and trophy trees are to be preserved. Trophy trees are defined as hardwoods with 24 inches or greater DBH, pines with 30 inches or greater DBH, and understory trees with 12 inches or greater DBH. Parking lots must have a minimum average density of one tree for every eight spaces and no parking space should be more than 50 feet from the trunk of a tree.

The last element, scenic corridors, is the “view protection” element of the ordinance. This section requires a certain width of trees and landscaping be maintained around roads that have been designated by the Planning Commission and County Council as “scenic corridors.” These regulations require a clearing plan be submitted to the Landscape Administrator, and that all canopy trees 8 inches or greater DBH, all understory trees 4 inches or greater DBH, and all trophy trees be retained. It also calls for landowners to plant trees along



designated scenic corridors where such trees are lacking.

Administration

The Landscape Administrator, who is also a registered forester, administers the ordinance. The Administrator has developed a one-page map of

the county that shows the areas in which the landscape ordinance is in effect. Developers receive a copy of the map with application materials. Developers are encouraged to attend a predevelopment review, which covers such topics as zoning, building, land disturbance, and landscaping. The Landscape Administrator has also prepared a summary of the landscape ordinance that is handed out at this meeting. The full ordinance is available upon request.

In addition to the development review process, developers and citizens have exposure to the ordinance through various channels. The county also has run advertisements on local closed circuit television, and articles have been written in local weekly newspapers. The Landscape Administrator works with the media to promote the landscape ordinance and to gain exposure for businesses that have installed good landscaping. The Landscape Administrator also makes presentations about the ordinance to local Chambers of Commerce and maintains good relationships with them. The business community in Lexington County has been supportive of this ordinance.

Before a building permit is issued, zoning, landscape, and land disturbance permits must be issued. After reviewing the landscape plan, the Landscape Administrator either approves the plan or works with the applicant to develop a workable plan. A strength of this ordinance is the discretion given to the Administrator to assist applicants in the development of a fair and reasonable plan. To date, there have not been any appeals to the Board of Zoning Appeals.

Although Lexington County's ordinance is unique in its view protection mandate, at this writing, no scenic corridors have been designated. In addition to the required Planning Commission and County Council approval of scenic corridors, coordination is needed between the county, municipalities, Department of Transportation, local utilities, and the area's property owners. The County is in the process of studying several potential scenic corridors.

Enforcement

The ordinance is enforced by the county's code enforcement staff which was recently transferred from the Department of Planning and Development to

the Sheriff's Office. Staff members often pursue violations called in by county residents. Violations of the ordinance are misdemeanors, and as such are subject to fines of \$500 per violation per day. In addition to fines, there are other consequences for violations. If the violation occurs during construction, mitigation is required. If the approved landscaping plan is not adhered to, the certificate of occupancy may be withheld. A landowner can be taken to court for violations that occur after the certificate of occupancy has been issued.

Assessment

Lexington County's ordinance includes standards which mandate minimum planting areas and certain material specifications, thereby increasing the likelihood of survival. Minimum tree preservation and landscaping standards in residential developments would strengthen the ordinance, according to the Landscape Administrator. The Director of Planning notes that flexibility is the most important aspect of the ordinance, and the Landscape Administrator has significant discretion in negotiations with applicants on workable plans. In addition, the ordinance was designed in six stand-alone parts, so that each district could adopt any or all parts. Fortunately for the Landscape Administrator (and for simplicity's sake), the six districts that adopted the ordinance adopted all six sections. The fact that the landscaping ordinance has been adopted by council districts could be problematic because district boundaries have since been redrawn, creating jurisdictional questions. The Landscape Administrator says that the ordinance has been effective at achieving its goals and believes that the citizens generally are positive about the ordinance. The ordinance also won praise outside the county when Lexington County was recognized by the South Carolina Urban and Community Forestry Council with its 2002 Golden Acorn Award for an Outstanding Forestry Program.

Future Plans

The Landscape Administrator would like the county's entire natural resource protection program to be coordinated, linking trees to water resources

to soil conservation, for example. In conjunction with such a program, a system of conservation easements might be established, and perhaps a transfer of development rights program investigated. For now, the county's plans include possibly reviewing commercial forestry regulations and designating a scenic corridor. Corley Mill Road, a picturesque residential road which connects Lake Murray to West Columbia, is currently under consideration for a scenic corridor.

Conclusion

Lexington County's ordinance was drafted by representatives from a variety of disciplines and interests and is therefore well tailored to the diverse needs of the county's residents. The ordinance provides flexible options and allows the Landscape Administrator to use some discretion, both reasons why the ordinance is considered successful. This ordinance is an important step in Lexington's County's efforts to protect its natural resources.

To see the ordinance, please go to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Lexington County Code of Ordinances*, § 14-137.

Timber Harvesting Ordinances

Timber harvesting ordinances generally apply to forestry operations that are eligible for timberland value assessment for property tax purposes. Timber harvesting includes the planting, cutting, moving, processing, transporting and reforestation of large stands of timber. The purpose of regulation is to limit environmental damage and the impacts on surrounding properties caused by the harvesting.

There are a number of federal and state environmental regulations that relate in some way to timber operations. The regulations include the South Carolina Water Pollution Control Act, Clean Water Acts, Endangered Species Act, Resource Conservation and Recovery Act, Prescribed Burning Act, Critical Area and Navigable Waters Permits, and the Coastal Zone Act Reauthorization Amendments. South Carolina recently passed the Forest Management Protection Act which states that local governments cannot apply *nuisance* laws to forestry operations that follow the SC Forestry Commission's Best Management Practices (BMPs). Communities, however, can apply appropriate land use regulations.

Local government regulation has increased over the past decade due in part to the increase of residential development in rural areas. This urbanization brings people into areas where timber harvesting has been a traditional practice. Because forests mature over a number of years, adjoining property owners may negatively perceive changes in the forest that they thought was a permanent fixture. These changes may include the use of fire, chemicals, and heavy equipment for management purposes. Long standing forestry operations, in turn, become targets for complaints resulting in requests for timber harvest regulation.

Typical local regulatory measures may include permits, standards for forest road construction, management plans, and buffer zones. The South Carolina Forestry Association, a forestry advocacy organization, has developed a list of recommendations for tree ordinances in rural areas. First, they suggest that ordinances include a permitting exemption for commercial timber operations, defined as "activities occurring on tracts 5 acres or larger devoted to the

production of marketable forest products.” Also, they note that operations should be clearly distinguished from land clearing for development. Finally, the association recommends that no development permits be granted for land cleared under the forestry exemption within three years of harvesting.

The City of Columbia and Beaufort County have ordinances with timber harvesting provisions. Columbia requires Zoning Administrator notification before commercial and non-commercial timber is harvested. In addition, commercial timber operations must have a fifty foot wide buffer around the property’s perimeter or a buffer equal to the district’s required setback, whichever is greater. A non-commercial timber operation must retain a minimum tree density of thirty units per acre. Beaufort County requires landowners to retain at least 25 overstory trees per acre after the harvest. In addition, 50-foot buffers are required along street frontages as is the revegetation of the property. Both communities require compliance with the Forestry Commission’s BMPs.

Of the ordinances submitted and reviewed, 22 of 52 municipalities with tree protection ordinances (42 percent) had exemptions for commercial forestry. Six of 12 counties with tree protection ordinances (50 percent) had commercial forestry exemptions; one county with a landscaping ordinance also had a commercial forestry exemption.

For more information:

- Herberger, Jr., R.A. (1989). Timber Cutting and the Law. In *Shading Our Cities*, Moll, G. & Ebenreck, S., eds. Washington, D.C.: Island Press.
- Martus, C.E., Haney, Jr., J.L., & Siegel, W.C. (1995). Local Forest Regulatory Ordinances. *Journal of Forestry*, 93 (6), 27-31.
- *Code of Laws of South Carolina, 1976*, Title 50, Chapter 2, §50-2-10 to §50-2-50 Forest Management Protection Act. Available at: www.lpittr.state.sc.us/code/t50c002.doc
- South Carolina Forestry Association at: www.scforestry.org
- South Carolina Forestry Commission at: www.state.sc.us/forest/

Table 12. Timber Harvesting Ordinances Reviewed

<i>Counties (1 of 46, 2%)</i>		
County	Population	Citation
Beaufort	120,937	www.municode.com (§ 106-1907)
<i>Municipalities (1 of 269, <1%)</i>		
Municipality	Population	Citation
Columbia	116,278	www.columbiasc.net/citygov/landscapeordinance.htm

Timber Harvesting Ordinance Case Study: Beaufort County

Introduction

Beaufort County (pop. 120,937) is located at the southern tip of South Carolina. It is home to the historic seaside village of Beaufort, Port Royal, and Hilton Head Island. It is also home to lesser-known gems such as Bluffton and Yemassee. The county is blessed with abundant natural resources, including forests, beaches, and marshes. Its ordinance is evidence of the important role of trees in Beaufort County, and is also one of few ordinances in the state with timber harvesting provisions.

The Ordinance

The current ordinance is a revision of the county's 1990 tree protection ordinance, which was written as part of the county's first zoning ordinance. The ordinance was revised in 1999 after two years of development. The tree protection ordinance is currently being revised again as a part of a general revision of the zoning code. This revision is being drafted by a consultant with the input of the Planning Commission, County Council, and the citizens.

A landscaping plan including a tree survey is required as part of the development review process. The ordinance originally applied to trees on public and private property in all zoning districts. After the ordinance passed, there were complaints about the tree protection requirements for existing single family residences; later the ordinance was amended to protect only live oaks 12 inches or greater DBH on these lots. The ordinance still applies in full to single family lots without an existing structure. A hierarchy of tree preservation is established for non-residential uses. Highest priority is given to specimen trees (17 species) of 24 inches or greater DBH, followed by any trees over 24 inches DBH and specimen trees over 12 inches DBH. A lower priority is assigned to retaining any tree over 8 inches DBH or any other specimen trees. All other trees are given the lowest priority in the hierarchy.

Beaufort County's tree protection ordinance is one of the first enacted by a county. The ordinance has been reviewed by several other cities and counties in the process of ordinance drafting and revision. The community is generally aware of the ordinance, and while developers do not receive any information about the tree protection ordinance with the application for building permit, they do receive information about the buffer requirements, which include trees.

This ordinance was chosen as an example of a "timber harvesting ordinance." At the same time, County officials have been cautious in addressing violations given the recent iterations and passage of *SC Code of Laws, Title 50, Chapter 2: Forest Management Protection Act*. Essentially, §50-2-50 says that no established forestry operation is or may become a nuisance, if the forestry operation adheres to South Carolina Forestry Commission's Best Management Practices. There is a particular loophole, however, that the county would like closed. The zoning ordinance does not allow the issuance of building permits for clearcut land within one year of the clearing. Under the harvesting provision, lots are sometimes cleared, then application is made for a building permit a year later, and the applicant is not subject to the tree preservation ordinance because there are no remaining trees to be preserved.

Administration

The ordinance is administered through review of site plans, tree surveys, and landscape plans by the Zoning Administrator. The natural resource planner is also a certified arborist if further consultation is needed. Appeals are heard by the Zoning Board of Appeals, but at this writing, no decisions have been appealed.

Enforcement

The Zoning Administrator and the Code Enforcement Officer enforce the ordinance. If the Zoning Administrator discovers a violation, remedies may include tree replacement and/or payment into the mitigation fund. The Code Enforcement Officer can write tickets and unresolved cases are heard at the

magistrate court level. Violations require inch-for-inch mitigation and fines run up to \$500 per day. The county engineer may withhold the certificate of compliance until mitigation is completed on a commercial development site. If the violation occurs on a single-family lot, the Building Codes Inspector may withhold the certificate of occupancy pending mitigation.

Assessment

The Zoning Administrator and the natural resource planner say there is some interest in having more trees required after development, especially in large subdivisions. In addition, there are other tree species that should be candidates for specimen tree consideration. Long term tree health is an issue and staff notes that persistent monitoring is needed. There has been discussion regarding replacement of the tree and/or a fine when trees die as a result of construction activity. As with most jurisdictions, a more active enforcement program is needed, especially monitoring of tree protection measures.

According to the Zoning Administrator and the natural resource coordinator, the ordinance is effective, and they believe that the citizens would say the same. The strengths of the ordinance are the requirements for a tree survey (even for single family lots) and “careful site planning,” and the fact that builders and developers are required to retain trees. Finally, the county’s code is very detailed in its provisions for trees—for example, requiring street trees in new developments, detailing tree protection measures, establishing parking lot landscaping standards, and requiring tree surveys.

Future Plans

The county is currently undergoing a revision of the entire zoning ordinance, including the tree protection regulations. There is a hope that the future will see more active enforcement of the tree-related ordinances, particularly the tree protection measures during construction.

Conclusions

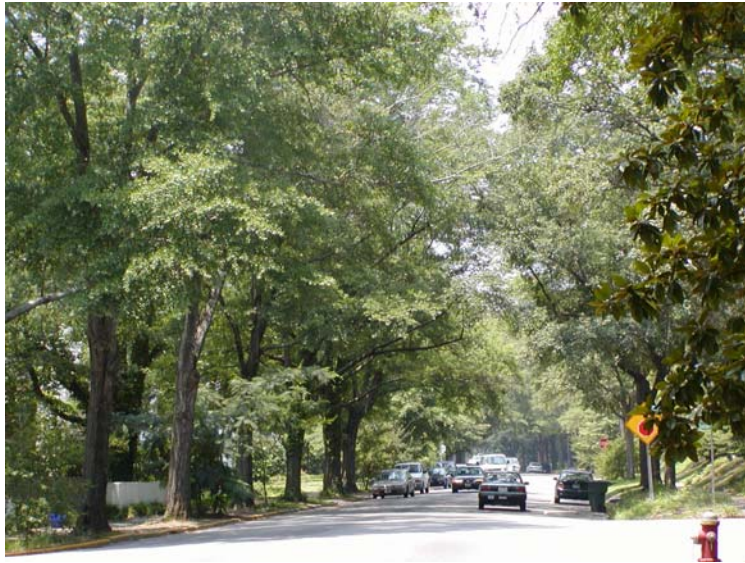
Beaufort County has a very detailed ordinance that is often reviewed by other jurisdictions seeking to develop or revise an existing ordinance. The county is currently revising the ordinance, so perhaps some of the concerns of the staff will be addressed. The ordinance is notable in that it requires tree protection in all areas, including residential areas. Beaufort County is experiencing phenomenal growth rates (the county's population ballooned 40 percent from 1990 to 2000), and this strong tree ordinance is an important part of an integrated program to protect the county's natural resources.

To see the ordinance, please go to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Beaufort County Code of Ordinances*, § 106-1907.

Comprehensive Ordinance

Columbia's ordinance is considered comprehensive because it contains elements of four of this study's five categories of ordinances. As discussed in the chapter on timber harvesting, the City of Columbia requires notification before harvesting, a buffer, and a minimum tree density after harvesting. Columbia's ordinance also has provisions for street trees, including requiring permits for removal and requiring utility companies to submit written specifications for maintenance of city-owned trees. The ordinance further requires parking lot landscaping, tree density factor for a site, and buffers between uses. Finally, the ordinance mandates tree retention, protection, and replacement. While several other communities had ordinances which included more than one type of ordinance, Columbia's was the most comprehensive of the ordinances reviewed.

Comprehensive Ordinance Case Study: City of Columbia



One of Columbia's tree-lined residential streets.

Introduction

The General Assembly founded the City of Columbia (pop. 116,278) in 1786. It is the first planned capital city in the United States, as shown in its unusually wide, tree-lined streets. Columbia is the state's largest city, both in terms of population and size (125 square miles). The city is located in the Midlands of the state along the Congaree River and is part of both Richland and Lexington Counties. Columbia is home to the main campus of the University of South Carolina, the Riverbanks Zoo, and the army's largest training base, Fort Jackson.

The Ordinance

Columbia's Landscape Ordinance is thorough in its standards for street trees, landscaping, tree protection, and timber harvesting. It applies to trees on public and private property, excluding single-family detached residences and utilities, and to new and retained trees. The ordinance requires minimum density factors, which are percentages of required tree coverage, based on tree type and size as well as property size and use.

Protected trees, which include grand trees, city-maintained trees, and trees in protected zones, are also addressed in the ordinance. If construction necessitates removal of protected trees, the applicant must replace them based on the density factors noted above. Grand trees are shade trees 24 inches or greater DBH, pine and softwoods 30 inches or greater DBH, and small-maturing trees (such as the dogwood) 10 inches or greater DBH. If a grand tree is removed, it must be replaced with a shade tree at a one-for-one density factor unit replacement. This is in addition to the tree coverage required for the more general protected trees category.

The main impetus for the ordinance was the concern over the rapidly decreasing number of trees in the city. The Deputy Director of Planning and Zoning and the Director of the Forestry and Beautification Department jointly developed the first draft of the ordinance after research of other jurisdictions' ordinances. The draft was presented to an ad hoc committee appointed by City Council. The committee included three members of the Appearance Committee, three members of the Planning Commission, and three representatives of the development community.

Builders and developers were concerned about the ordinance, as was the Chamber of Commerce. The city eventually agreed to consult with a landscape architect, who was asked to apply and analyze some case studies under the new ordinance. The landscape architect's recommendations resulted in significant changes to the ordinance. A sliding scale was developed which requires more landscaping for larger developments while allowing small redevelopments to provide a smaller percentage area of landscaping [§ 17-418(b)(2)(a) and § 17-419(b)(3)]. Second, an alternative compliance committee was established to develop fair alternatives to landscaping requirements that applicants considered onerous.

With the drafting process well underway, a large national retailer began looking at a site within the city. Support for the ordinance grew when the community realized how many trees would be removed if the site were developed. The City Council adopted the ordinance in July of 2002 after two and

a half years in development. The final ordinance's tree protection provisions are adapted from Fulton County, Georgia, and the final parking lot landscaping requirements were adapted from Charlotte, North Carolina. The buffer provisions were adapted from Raleigh, North Carolina. There are at least two other municipalities that have contacted the planning department for advice about instituting an ordinance similar to Columbia's.

Administration

Most developers learn about the landscape ordinance through the zoning office which refers them to the land development planner. In addition, they can request the ordinance via electronic mail. Landscape plans are required and the Planning Commission does not review a site plan without a landscaping plan. The City Arborist sits on the development review board as well as informally reviews plans at the request of the planning department. The Tree and Appearance Commission is an advisory body that may also be consulted about new developments. The ordinance is administered by the land development planner who reviews all submitted plans, which must include a tree survey. The tree survey must be completed by a registered land surveyor, while the tree preservation plan (required for construction or any other activity that results in land disturbance) must be completed by an arborist certified by the International Society of Arboriculture or a South Carolina registered forester. The planning and zoning department has plans to clarify some of the language in the ordinance through the development of administrative guidelines.

If the land development planner denies an application, this decision can be appealed to the alternative compliance committee. This committee is composed of the land development planner, the Deputy Director of Planning and Zoning, and the Zoning Administrator. This committee "may approve an alternate plan that proposes a different, creative design solution provided that the design meets the standards of quality, effectiveness, durability, and performance" required by the ordinance. Because the alternative compliance committee is flexible in working with applicants toward an acceptable solution, all matters that

have come before the committee in the year since the ordinance was enacted have been resolved. If there had been further dispute, the decision of either the land development planner or the alternative compliance committee could have been appealed to the Board of Zoning Appeals.

Enforcement

Violations are most commonly discovered by citizen complaint. The Zoning Administrator notifies the property owner of the violation in writing and specifies remedies and a timetable for compliance. Penalties may include fines of up to \$500 per day per violation, stop work orders, and/or withholding or nullification of necessary permits. The land development planner inspects the site and verifies that the landscaping has been completed according to the approved plan before the certificate of occupancy is issued.

Assessment

Columbia's ordinance is thorough; however, according to staff, there are areas in which the ordinance could be strengthened. The tree preservation mandate should be extended to cover trees on individual residential lots. Currently, when a developer lays out a residential subdivision, trees must be preserved; however, once the lots are individually platted and sold to a builder, the lots are no longer subject to the ordinance and the protected trees may be removed.

Overall, the planning staff considers the ordinance a success. This is due in large part to the existence of the alternative compliance committee which allows aggrieved parties the opportunity to informally appeal the land development planner's decision and compromise to negotiate a workable solution.

Future Plans

The Planning and Zoning Department is currently developing guidelines to assist applicants in designing and submitting landscape plans. Eventually a

booklet will be available that explains the ordinance with illustrations. It will be available in the department office as well as online. As public input is sought and the guidelines are distributed, amendments to the ordinance may become necessary. The city also intends to pursue more citizen education programs about the importance of trees in the urban setting.

Conclusion

The success of this ordinance can be attributed to two factors: the extensive review before adoption (including an independent study by a landscape architect) and the alternative compliance committee. These elements made the ordinance more palatable to those that otherwise may have resisted it. Columbia's ordinance should be noted for its comprehensiveness—it protects street trees, mandates tree preservation, establishes landscaping requirements, and sets standards for timber harvesting. It is well suited for a capital city facing development pressures.



Street trees in Columbia.

To see the ordinance, please go to the City of Columbia's website (www.columbiasc.net/citygov/landscapeordinance.htm).

LESSONS LEARNED AND OTHER CONSIDERATIONS

This past year's contacts with South Carolina's local government officials and forestry professionals have provided a wealth of information not necessarily included in the case studies. Based on observations and experience, effective processes and ordinance elements as well as concerns are listed below and grouped by topic area. Some of the remarks are instructive. Other comments, however, are simply representative of issues that communities might be prepared to address if they intend to pursue regulatory measures.

Public Input and Advocacy

- Get citizens involved during the drafting of the ordinance—not at the end. Citizens will decide what's reasonable and let their elected officials know.

- Develop a campaign strategy to educate, solicit support, and to get the ordinance passed. Get media, civic groups, and other stakeholders involved early and often. Try to develop consensus on the long range goals of the effort. Keep businesses and the general public constantly involved.

- Understand the costs, benefits, and anticipate the dissenters' concerns. Seriously assess the pros and cons of any ordinance. Develop talking points to address issues.

- Use the power of a negatively perceived event—say, the entry of an irresponsible development plan —to organize and energize your community. While it may be late too late to address that particular proposal, it may be an example of what the community does not want and can provide a powerful rallying tool.

Planning

- Seek community involvement early on in the planning process.
- Consider innovative ways to keep urban forests and allow development.
- Consider the value of trees when making decisions regarding land use and design.
- Technical details are important to know if green infrastructure is to be incorporated into local policies.
- Trees are an afterthought in urban settings. Because attention is not afforded to planting when the underground infrastructure is installed, the trees often are planted in inappropriate spaces. It is important that arborists, planners, engineers, and infrastructure providers continue communication throughout planning, planting, installation and maintenance phases.
- Grant money can help get projects off the ground.
- Tree cover percentage goals should be set for land use designations.
- Timberland is being transferred to private developers in record numbers across the state of South Carolina. It is important to anticipate the effects of this major land use shift.

Resources

- The Master Gardener program is full of potential advocates and community educators on trees.
- Grants are important tools in the small jurisdictions' toolboxes for getting an ordinance developed.

- Regional urban foresters and Councils of Government are important information resources.

Benefits/Costs

- The case for more trees will be more effective if advocates know the financial costs and benefits. In addition, it is important to understand scientific correlations and benefits related to tree canopy.
- Some developers say that tree preservation increases the cost of new housing by \$1000 to \$3000.
- An Urban Land Institute publication states that “high quality landscape ...creates long term value”.
- Two hot-button issues of late have been tree preservation on private property, particularly on residential lots, and parking lot landscaping ordinances.
- It seems intuitive that people want trees around their new homes, yet developers and builders are known to clear-cut lots before construction begins. One builder says that this clearing is the more cost effective method.

Ordinance Development and Mechanics

- Budget adequate time for ordinance development, citizen participation and public meetings. In Newberry, it took three months; it took about two and a half years in Columbia.
- Fully understand why a particular ordinance is needed and what is expected if it is enacted versus if it is not enacted.

- Look at other community's ordinances to understand available options. At the same time, take care to adopt ordinances that are relative, realistic, and useful to the community's specific needs.
- Good definitions are important.
- Spell out penalties in the ordinance.
- Anticipate that private property regulation will raise a red flag for some citizens.
- Some communities support the regulation of special trees in residential areas.
- Review other ordinances enacted in the city to guard against conflicting regulations.
- If developing an ordinance to address clearcutting for development purposes, consider the effects on legitimate timber harvesting.
- Sources have indicated that Charlotte has a residential tree ordinance that addresses clearcutting but also allows density bonuses for tree protection.
- A well written ordinance that allows flexibility and creativity in design is more likely to succeed.
- Consider the legal implications of an ordinance, particularly its definitions, authority, standards, and enforcement.
- Review ordinances regularly to ensure that they are appropriate and continue to work as intended.

- Be specific in the ordinance regarding the types and sizes of trees to be planted. For example, rather than saying plantings should be more than seedlings, use __inches at DBH.
- Encourage the use of native trees that are better suited to the climatic conditions and soil types of an area.
- A variety of trees—both in age and in species—is important to keep a streetscape looking full as some trees die and other trees grow to replace them. Diversification of species also assures that a species-specific pest or fungus does not wipe out entire rows or stands of trees.

Enforcement

- Be sure the ordinance provisions are enforceable. Have an attorney review the draft before it is adopted and before issues develop.
- Enforcement is costly and time-consuming but a critical element in the success of an ordinance. Budget for enforcement. Often, ordinances became effective or possible only when a staff position is created for someone to review and approve plans and inspect final developments.
- For small jurisdictions, the answer to the question “How much does it cost to enforce your ordinance?” was almost always negligible or don’t know. Larger municipalities found it easier to assign a price because the price could easily be extrapolated from the salary of the Landscape Administrator who was hired specifically to administer the ordinance.
- Consider compliance options.

- Fines should be substantial enough to not be considered a standard “cost of doing business.”
- York County has a clause in its ordinance that says the municipalities may sign an agreement to have the ordinance enforced within municipal limits. At this point, no municipality has signed the agreement, but some are expected to sign on soon.

Other Considerations and Final Thoughts

From a business and personal perspective, South Carolina continues to draw people enamored by its strong 'sense of place.' Yet, the state is at a critical juncture. From 1990 to 2000, the state's population grew by 15.1 percent compared to 13.1 percent for the country. More telling, however, is the change in the state's urbanized areas which increased from 54.6 percent in 1990 to 60.5 percent in 2000. South Carolina is no longer a rural state, and over the next 25 years, the population is projected to grow by a million people (25.6 percent)!

The challenge facing communities is how to prepare for this growth and still maintain and enhance the tree cover and quality of life in our urban areas. South Carolina lacks a statewide effort to coordinate and promote land planning. For this reason, a number of local governments have taken charge of their future through comprehensive planning processes that include urban forestry components.

During these planning processes, citizens frequently are posed with the question of what they value about their counties and cities. Without question, citizens like their trees – the heritage trees as well as the promising young trees. However, the regulation of trees is a challenge, particularly in a strong property rights state like South Carolina. At the same time, city and county councils around the state view regulation as an effective tool to implement a community's vision for the future. Ordinances can be attractive to the developer and the citizens when coupled with flexibility and incentives, but they must also include straightforward and reasonable procedures. Financial, technical, and staffing resources are necessary to ensure smooth implementation and administration of an ordinance. Finally, it is important that any forestry program is tailored to the needs and resources of the specific community.

APPENDIX A: CASE STUDY ORDINANCES

As noted in the case studies, several jurisdictions' ordinances are available on the Internet, and are therefore not included here.

To see Hilton Head Island's ordinance, please go to the Rapid Regs website (www.rapdiregs.com) > *Hilton Head Island, SC Land Management Ordinance*, §16-3-401 to 16-3-409; 16-6-401 to 16-6-407; 16-8-106.

To see Myrtle Beach's ordinances, please go to the City of Myrtle Beach's website (www.cityofmyrtlebeach.com/treelaws.html) and to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Myrtle Beach Code of Ordinances*, § 910.1 to 910.16.

To see Beaufort County's ordinance, please go to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Beaufort County Code of Ordinances*, § 106-1907.

To see Lexington County's ordinance, please go to the Municipal Code Corporation's website (www.municode.com) > Online Codes > South Carolina > *Lexington County Code of Ordinances*, § 14-137.

To see Columbia's ordinance, please go to the City of Columbia's website (www.columbiasc.net/citygov/landscapeordinance.htm).

Street Tree Ordinance: City of Dillon

1 Title

This ordinance shall be known and may be cited as the “Dillon Tree Ordinance”.

1 Purpose

The purpose of this ordinance is to establish policies, regulations, and standards for the management of public trees within the City Limits, and to regulate the protection and removal of Heritage Trees. Public tree management shall include, but not be limited to, tree establishment, maintenance, protection, and removal.

2 Exceptions

All major subdivisions not classified as minor subdivisions in accordance with the City of Dillon Land Development Regulations, Section 5-5-11, including but not limited to subdivisions of eleven (11) or more lots, or any size subdivision requiring any new road or extension of the local government facilities or the creation of any public improvements are exempt from the requirements of the Dillon Tree Ordinance and shall be subject to the requirements of the City of Dillon Land Development Regulations.

3 Objectives

The objectives of public tree management shall be to maximize the functional benefits of trees while minimizing the costs of management. The objectives of this ordinance shall be as listed below.

Maintain the City’s tree canopy cover at or above its current level.

Maintain and improve community character.

Enhance the aesthetic appearance of the landscape.

Provide direction and support to tree management.

4 Benefits of Trees

Trees provide many environmental, social, and economic benefits that include, but are not limited to, the following.

Trees produce oxygen and absorb carbon dioxide, thereby reducing air pollution and improving air quality.

Trees filter out dust, particulate matter, and airborne pollutants, thereby improving air quality.

Trees intercept precipitation, thereby reducing storm water runoff and improving water quality.

Tree roots hold the soil, thereby reducing soil erosion and sedimentation and improving water quality.

Trees provide shade and cooling and provide windbreaks, thereby reducing energy usage and air conditioning and heating costs.

Trees provide wildlife food and habitat.

Trees buffer different land uses to eliminate or minimize nuisances such as dust, litter, noise, glare, signs, and unsightly buildings or parking areas.

Trees improve public health by reducing stress, encouraging exercise, calming traffic, decreasing illness recovery times, reducing crime and domestic violence, and improving concentration.

Trees attract residents, visitors, commerce and industry to the City and increase the value and marketability of property.

Trees beautify the City and protect and enhance the quality of life.

5 Applicability

The provisions of this ordinance shall apply to all public trees, as described herein. Some provisions of this ordinance shall apply to trees located on private property under specific and limited circumstances and to trees designated as Heritage Trees, as described herein.

5.1 Public Trees

Public trees shall include all trees growing on City owned property within the street rights-of-way, in parks, in cemeteries, around public facilities, and on all other City maintained properties within the City Limits.

5.2 Heritage Trees

All trees growing on public or private property within the City Limits, except for those growing on single-family residential property, that meet one or more of the following criteria shall be designated as Heritage Trees.

Has a diameter greater than 24 inches.

Is of an historic or landmark character, associated with a place, individual, or event important to the City or neighborhood's history, or located such that it is a widely known and appreciated tree within the City.

Is a rare or unusual species, or an unusually large size for the species.

5.3 Determination of Heritage Tree Status

The Tree Committee shall make the final decision as to whether or not a tree shall be considered a Heritage Tree.

6 Administration

The Street Department Manager or his/her designee shall be responsible for the administration of all provisions of this ordinance and for public tree management. The Enforcement Officer shall be responsible for the enforcement of all provisions of this ordinance. The City Manager and other departments within the City of Dillon shall support the Street Department and the Enforcement Officer in all tree management activities.

7 Definitions

As used within this ordinance, the following terms shall have the meanings set forth in this section. The word "shall" as used in this ordinance is mandatory and not merely directory.

Certified Arborist	An individual who has passed the International Society of Arboriculture's Certified Arborist examination, is designated as a Certified Arborist by said organization, and maintains such designation through attending at least 30 hours of qualifying continuing education within each three-year period certification period.
Critical Root Zone	A more or less circular area on the ground equivalent to the area within the tree's dripline, or a circle around the trunk with a radius equivalent to 1.5 feet for every 1 inch in dbh, whichever is greater.
Crown	The upper portion of a tree that contains the large scaffold limbs, branches, twigs, and leaves.
DBH	Diameter of the tree trunk at breast height, 4.5 feet above the ground.
Dripline	A vertical line that extends down at the point of the greatest extent of the tree's branches.
Establishment	The selection, placement, planting, and maintenance of new trees in the landscape. The minimum period of time required for establishing trees is generally considered to be three (3) years.
Hazard Tree	A hazard tree is one that is at risk for failure, either whole or in part, with the part large enough to cause damage, and there exists within the falling distance of the tree or tree part a target, such as people, buildings, vehicles, or hardscape.
Heritage Tree	All trees growing on public or private property within the City Limits, except for those growing on single-family residential property, that have a diameter greater than 24 inches, have an historic or landmark character, are associated with a place, individual, or event important to the City or neighborhood's history, are a rare or unusual species, are of an unusually large size for the species, or are located such that they are widely known and appreciated tree within the City.
Maintenance	Routine, periodic, or occasional activities directed at maintaining or improving a tree's health and condition. Maintenance activities include but are not limited to mulching, pruning, irrigation, fertilization, pest control, cabling and bracing, and lightning protection system installation.
Protection	The active or passive protection of a tree's roots, trunk, and crown for the

purpose of avoiding damage to these living structures and maintaining tree health and structural integrity.

Pruning	The deliberate removal of tree branches for a specific purpose, i.e. young tree training, deadwood removal, utility line, traffic, or pedestrian clearance, or correcting structural defects.
Removal	The cutting of a tree at ground line to remove the tree's trunk and crown. The tree stump and roots may or may not be removed along with the trunk and crown.
Roots	The below ground portion of a tree that includes large, woody support roots and small, non-woody, fibrous "feeder" roots. Roots are generally located within the top 18 inches of soil and extend out from the trunk two (2) to three (3) times the width of the crown.
Topping	The improper removal of tree limbs with cuts made between nodes; also known as "tipping", "heading", and "shearing".
Tree	A woody perennial plant, generally with a single trunk but sometimes with multiple trunks, with the potential to attain a mature size of at least 3 inches in trunk diameter at 4.5 feet above the ground and a height of at least 15 feet.
Trunk	The main woody stem of a tree that supports the crown and functions in the transport of water, nutrients, and carbohydrates from the crown to the roots and the roots to the crown.

8 Tree Committee

8.1 Name

A tree board shall be created and shall be known as the "Dillon Tree Committee".

8.2 Members

The Tree Committee shall have seven (7) members, citizens and residents of the City, that shall be appointed by the Mayor and City Council and approved by the Mayor and City Council. One (1) advisory, non-voting member shall be appointed in addition to the seven (7) members. Tree Committee members shall be chosen to be geographically representative of the community and shall include a professional forester or arborist as well as at-large members. An unlimited number of ex-officio members shall be invited by the Tree Committee to serve in a non-voting capacity.

8.3 Quorum

A quorum shall consist of four (4) voting members. The Tree Committee shall take no action in the absence of a quorum.

8.4 Compensation

Tree Committee members shall serve without compensation. The City, upon receipt of appropriate receipts and documentation, shall reimburse reasonable expenses incurred by members and approved by the Committee.

8.5 Term of Office

The term of office for Tree Committee members shall be four (4) years. Members may serve no more than two terms. For the initial Committee, the Mayor and City Council shall appoint three (3) members to four (4) year terms, two (2) members to three (3) year terms, and two (2) members to two (2) year terms.

8.6 Officers, Regulations, and Proceedings

The Tree Committee shall elect a Chairman, Secretary, and Treasurer. The Tree Committee shall make its own rules and regulations above and beyond those listed in herein, shall keep minutes of its meetings, shall keep records of its activities through correspondence, photographs, articles, and written summaries, and shall keep accurate and current financial records.

8.6.1 Chairman

The Chairman shall be elected by members of the Tree Committee and shall serve a term of one (1) year. The Chairman may serve no more than four (4) consecutive years. The Chairman shall be responsible for setting each meeting's agenda and for conducting the meetings. In the absence of the Chairman, the Treasurer shall carry out the responsibilities of Chairman.

8.6.2 Secretary

The Secretary shall be elected by the members of the Tree Committee and shall serve a term of one (1) year. The Secretary may serve no more than four (4) consecutive years. The Secretary shall be responsible for keeping records of the proceeding and events of the Tree Committee, publicizing meetings in the local newspaper, distributing meeting announcements to members, and recording the minutes of each meeting. In the absence of the Chairman and the Treasurer, the Secretary or a member he/she designates shall carry out the responsibilities of Chairman.

8.6.3 Treasurer

The Treasurer shall be elected by the members of the Tree Committee and shall serve a term of one (1) year. The Treasurer may serve a total of (4) years. The Treasurer shall be responsible for administering the Tree Committee budget, maintaining records of income and expenditures, maintaining records of the amount and value of in-kind donations and volunteer hours, and preparing an annual budget and financial report. The Treasurer shall carry out the responsibilities of the Chairman in his/her absence.

8.7 Responsibilities Generally

The responsibilities of the Tree Committee shall include, but not be limited to, the following.
Advise the City in all tree-related matters.

Serve as a source of information about proper tree maintenance techniques and community tree management policies.

Make recommendations for public tree establishment, maintenance, protection, and removal.

Provide input to the Street Department for the development of annual work plans and long range planning.

Develop and maintain a list of trees recommended and not recommended for planting in Dillon.

Investigate and apply for donations and grant funding from public and private sources for community forestry related projects.

Provide regular community tree care educational programs and information about the value of trees and proper tree maintenance to City staff and citizens.

Review the Tree Ordinance and provide recommendations for changes to the Planning and Zoning Board and in turn to the Mayor and City Council at least every two (2) years.

Promote and support the Tree City USA program.

Prepare an annual report to the City Council that includes the past year's accomplishments, financial report, next year's budget, and planned activities.

8.8 Meetings

The Tree Committee shall meet monthly. Special meetings may be held in addition to the regular monthly meetings. At least seven (7) days public notice shall be given in the local newspaper prior to each regularly scheduled or special meeting. Members absent for more than three (3) consecutive meetings or more than one-third (1/3) of the regularly scheduled meetings per year may be replaced by recommendation of the Tree Committee to the Mayor and City Council. The Secretary shall advise the Mayor and City Council of any members recommended to be replaced or any member that has resigned and ask the Mayor and City Council to appoint a new member to fill the unexpired term of the vacating member.

8.9 Sub-committees

The Tree Committee may, at its discretion, create sub-committees to assist in conducting its business. The members of these committees may or may not be members of the Tree Committee.

8.10 Donations

The Tree Committee shall have the authority to accept public funds from tax revenues, fines, fees, grants, or bequests, materials, or donations of cash or in-kind services that are intended to provide for the general operations of the Committee and for the execution and implementation of tree-related activities or projects. These funds shall be placed in a separate Tree Committee account.

9 Tree City USA

The City of Dillon shall maintain Tree City USA status and submit an application for this designation each year by December 15th to the South Carolina Forestry Commission and the National Arbor Day Foundation. To maintain eligibility for this program, the City shall meet the following criteria. Hold an annual Arbor Day Celebration on or around Arbor Day in South Carolina, the 1st Friday in December. An Arbor Day Proclamation shall be created and included as part of the celebration.

Have a tree ordinance. The tree ordinance shall be reviewed, and revised if necessary, at least once every two (2) years.

Have an active Tree Committee, appointed by the Mayor and Council, responsible for advising the City on tree-related matters.

Spend at least \$2 per capita on public tree management, including planning, education, tree establishment, maintenance, protection, and removal, and any and all other maintenance or management activities.

10 Tree Inventory

The City shall maintain a current inventory of all public trees. The inventory data gathered and recorded for each tree shall include, at a minimum, the following information.

Location (address or latitude/longitude coordinates).

Tree species.

DBH.

Condition.

Maintenance needs.

11 Annual Work Plan

The Street Department shall develop an annual work plan for the management of public trees utilizing the tree inventory information and input from the Tree Committee. The work plan shall contain the following plans and schedules.

(a) Tree planting.

New tree maintenance including mulching, irrigation, and young tree training pruning.

Tree pruning.

Tree mulching.

(e) Tree removal.

12 Public Tree Maintenance Standards

The City shall have the right and responsibility to establish, maintain, protect, and remove trees located on public property. Public tree maintenance standards shall be developed and made a part of this ordinance and shall include, at a minimum, standards for tree establishment, maintenance (to include pruning, mulching, fertilization, irrigation, and pest control), protection, and removal. These standards shall

incorporate the current version of the following professional standards from the American National Standards Institute.

ANSI Z60.1 American National Standard for Nursery Stock

ANSI Z133.1 American National Standard for Arboricultural Operations – Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush—Safety Requirements

ANSI A300 American National Standard for Tree Care Operations – Trees, Brush, and Other Woody Plant Maintenance—Standard Practices (Pruning)

ANSI A300 Part 2 - American National Standard for Tree Care Operations – Trees, Brush, and Other Woody Plant Maintenance—Standard Practices (Fertilization)

ANSI A300 Part 3 – American National Standard for Tree Care Operations – Trees, Brush, and Other Woody Plant Maintenance—Standard Practices (Support Systems & Cabling, Bracing, and Guying)

ANSI A300 Part 4 – American National Standard for Tree Care Operations – Trees, Brush, and Other Woody Plant Maintenance—Standard Practices (Lightning Protection Systems)

12.1 Establishment

12.1.1 Tree Species List

The City shall keep a current list of trees recommended for planting on public property and not recommended for planting. The list shall be developed and maintained by the Tree Committee. The list shall include, at a minimum, the following information.

Species common name.

Latin name.

Mature height category.

Recommended or not recommended.

Mature height categories shall be as listed below.

Small – less than 25 feet in height at maturity.

Medium – less than 40 feet in height at maturity.

Large – at least 40 feet and up to 100 feet or more in height at maturity.

12.1.2 Tree Quality

Trees planted on City property shall be good quality and have the following characteristics.

Have healthy roots, trunk, and crown.

Be free from stem encircling and stem girdling roots.

Have a form characteristic of the species, but otherwise with a straight trunk and without co-dominant stems and included bark.

Have well-spaced branches.

Be free from insects, diseases, and mechanical injuries.

12.1.2 Tree Placement

Trees shall be planted in locations that meet the following criteria.

At least 30 feet from street intersections.

At least 25 feet from stop signs and light poles.

At least 15 feet from driveways, utility poles, fire hydrants, and mail boxes.

At least 2.5 feet from the curb and sidewalks.

Only small trees shall be planted beneath or within 20 feet of overhead utility lines.

Small trees shall be planted no closer than 10 feet to a building.

No medium tree shall be planted closer than 20 feet to overhead electrical power lines or 20 feet to a building.

No large tree shall be planted closer than 30 feet to overhead electrical power lines or 30 feet to a building.

The Tree Committee may approve other tree placement designs in public spaces that do not meet the above criteria, such as a planned streetscape design.

12.1.4 Spacing Between Trees

For all street tree plantings, except for special planting plans approved by the Tree Committee, the following minimum planting distances shall be required.

Small trees shall be planted at least 25 feet apart.

Medium trees shall be planted at least 35 feet apart.
Large trees shall be planted at least 50 feet apart.

12.1.5 Open Soil Surface Area

Trees shall have a minimum of 16 square feet of open soil surface area when planted in tree wells or concrete cutouts. Otherwise, trees shall have the minimum open soil surface areas listed below.
Small trees – 16 square feet (4 feet x 4 feet).

Medium trees – 64 square feet (8 feet x 8 feet).

(c) Large trees – 144 square feet (12 feet x 12 feet).

12.1.6 Utility Locates

The party excavating the planting hole shall be responsible for insuring that all underground utilities have been located and marked prior to any excavation.

12.1.7 City Tree Planting Permit

A City Tree Planting Permit shall be required for anyone to plant trees on public property. On State Highway rights-of-way, a State of South Carolina Encroachment Permit shall also be required (see Sec. 12.1.8). The Code Enforcement Officer shall be responsible for issuing City Tree Planting Permits. Applications for City Tree Planting Permits shall include, at a minimum, the following information.
Application date.

Name and contact information of applicant.

Address where the tree is to be planted.

Tree species to be planted.

Caliper size of tree (diameter of trunk measured at 6 inches above the ground line).

Exact location of planting site and description, including the presence of overhead or underground utility lines.

Three-year maintenance plan and schedule.

12.1.8 State of South Carolina Encroachment Permit

A State of South Carolina Encroachment Permit is required for any landscaping work performed on State Highway rights-of-way and can be requested from the South Carolina Department of Transportation. A sketch plan of the proposed project must be attached to the Encroachment Permit Application. This plan should show the planting arrangement and the type of plants to be used. Photographs may also be helpful. All proposed Encroachment Permit applications should clearly state the following information.

Speed limit (mph).

Cut or fill slope (check with local Resident Maintenance Engineer).

Traffic volume – less or greater than 1,500 ADT (check with local Resident Maintenance Engineer).

Label guardrail; barrier curb; sidewalks; edge of pavement and right-of-way line on sketch; indicate traffic lights at road intersections (a label stating “TL” in a box is acceptable).

State distance plant material is from curb or edge of pavement (offset).

12.1 Maintenance

12.2.1. Pruning

Public Trees

Tree pruning shall be done on a routine basis to provide pedestrian, traffic, sign, light, and signal clearance, to reduce conflicts with buildings and infrastructure, to improve tree structure, form, and health, and to remove dead, diseased, dying and otherwise objectionable branches over two (2) inches in diameter. Tree pruning shall be done in accordance with current professional standards (ANSI A300). The following clearances shall be maintained through routine pruning.

Seven (7) feet above sidewalks and walkways.

Twelve (12) feet above residential streets.

Sixteen (16) feet above major thoroughfares.

Newly Planted Trees

Newly planted trees shall be inspected during the summer months at one (1), two (2), and three (3) years after planting and pruned if necessary to improve their structure and health.

Private Trees

The City shall have the right to prune trees on private property to provide clearance over public sidewalks and roadways, to improve visibility of signs, signals, and lights, and to reduce hazards.

Utility Line Clearance Pruning

All pruning completed for the purpose of utility line clearance shall be done in accordance with current professional standards (ANSI A300) and shall be supervised by a Certified Arborist.

Topping

The topping of any publicly owned tree shall not be permitted under any circumstances. The City may, at its discretion, require that any party topping public trees pay a penalty in an amount up to but no greater than the appraised value of the tree prior to topping.

12.2.2. Mulching

All newly planted trees shall be mulched with leaves, aged wood chips, pine straw, or other good quality organic mulch during the establishment period—the first three (3) years after planting. Mulch shall be applied in an even layer, 3-4 inches deep, out to the dripline of the tree. All trees shall be mulched where practical, as far out towards the dripline as possible. Mulch shall be kept at least 6 inches away from the tree trunk to avoid creating favorable conditions for insect, disease, or rodent infestation.

12.2.3 Fertilization

Fertilization may be done where and when a soil or foliar test indicates a nutrient deficiency. Fertilization shall be done according to current professional standards (ANSI A300).

12.2.4 Irrigation

Irrigation shall be done for all newly planted trees during the months of May through October at least once per week during periods of drought or low rainfall, up to an amount of 1 inch of water per week.

12.2.5 Pest Control

When public trees are found to have insect or disease infestations that pose a major threat to surrounding trees, they shall be effectively treated or removed by the City. Spraying of insecticides, fungicides, or herbicides shall be done only for the control of specific insects, diseases, or weeds with the proper materials in the necessary strength and applied at the proper time to obtain the desired control. General spraying for insect, disease, and weed control shall be discouraged.

12.3 Protection

During the installation, repair, alteration, or removal of any building, house, structure, utility line, or hardscape, or the conduct of a public event or gathering, any person, firm, or corporation in charge of such work or event shall protect the roots, trunk, and crown of adjacent public trees from harmful activities to prevent injury to such trees.

12.3.1 Activities Harmful to Trees

Activities harmful to trees shall include, but are not limited to, trenching, grading, grubbing, soil backfill or sedimentation, soil cuts, soil compaction from equipment, vehicle, or pedestrian traffic, soil compaction from materials storage, soil contamination from equipment maintenance and washouts, changes in water drainage, fire, trunk wounds, limb wounds, improper pruning, and broken branches. These activities are common during infrastructure installation or repair, building or facility construction, and public events or gatherings.

12.3.2 Tree Protection Fencing and Other Protection Measures

Except in the case of public events and gatherings, tree protection fencing shall be erected at the critical root zone prior to the commencement of any harmful activity by the individual in charge of that activity, and shall remain in place until the activity is completed. Other protection measures may include tunneling, trunk wraps, mulching, or irrigation.

Prior to public events and gatherings, trees shall be mulched as described herein.

12.3.3 Protection of Heritage Trees

Heritage Trees shall be protected from all harmful activities within their critical root zone. Tunneling at a depth of at least 24 inches, instead of trenching, shall be required for the installation of underground utility lines within the critical root zone of Heritage Trees,

Removal

12.4.1 Citizen Requests

A tree removal permit shall be required for anyone wishing to remove a tree on public property or to remove a Heritage Tree. The removal of trees on public property shall be the responsibility of the Street Department. The removal of Heritage Trees shall be the responsibility of the property owner, whether public or private. The Street Department or Tree Committee may charge the cost of the removal of trees in response to citizen requests, upon recommendation, to the citizen requesting the removal.

12.4.2 City Requests

The Street Department shall notify the Tree Committee at least ten (10) days before a regularly scheduled meeting of the Department's intent to remove Heritage Trees located on public property. This provision shall not apply in emergency situations or during storm damage clean up. The Department shall submit with the notification a copy of the Certified Arborist's report detailing the results of the Arborist's inspection and maintenance recommendations. The Tree Committee shall provide a ruling in writing to the City on the removals within three (3) days after the meeting.

12.4.3 Certified Arborist's Report

Prior to removing any Heritage Tree from public property, except in emergency situations and during storm damage clean up, the Street Department shall require a written report by an International Society of Arboriculture (ISA) Certified Arborist on the tree's health and condition, and a written approval by the Tree Committee. The Arborist's report shall be based upon a visual, on-the-ground inspection. The report shall include, as a minimum, the following information.

Tree identification information, including species, dbh, and location.

Condition value using the rating system published in the current edition of the Guide for Plant Appraisal developed by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture.

Hazard rating using the current edition of the Photographic Guide to the Evaluation of Hazard Trees in Urban Areas written by Nelda P. Metheny and James R. Clark, and published by the International Society of Arboriculture.

Recommended maintenance action (prune, cable and brace, remove, or other) and priority (routine or immediate).

12.4.4 Tree Removal Permit

A permit shall be required for any party, except for City personnel and those acting at the expressed request or direction of the City, to remove any tree located on public property and for the removal of Heritage Trees on private property. The Code Enforcement Director shall issue the Tree Removal Permit. The application for a tree removal permit shall be submitted to the Code Enforcement Officer at least ten (10) days prior to a regularly scheduled Tree Committee meeting. The Tree Committee shall rule on the application and notify the Code Enforcement Officer and the applicant of the results of the ruling within three (3) days after the meeting. The application for a Tree Removal Permit must include, at a minimum, the following information.

Application date.

Name and contact information of applicant.

Tree location.

Tree species.

Tree dbh.

Reason for removal.

12.4.5 Permitted Reasons

Removal shall be permitted for the following reasons. Removal for other reasons may be permitted by recommendation of the Tree Committee.

Tree is dead.

The tree is affected by an insect or disease problem that is untreatable and results in rapidly declining tree health or a hazardous condition.

Tree is dying due to past damage and its condition cannot be improved with standard maintenance techniques.

Tree has an uncorrectable structural defect that results in an increased risk of whole or partial tree failure.

Tree is reducing sight visibility and the correction of the problem will result in severe disfigurement of the tree or crown reduction below 50%.

The tree is in a restricted growing space, is in conflict with the surrounding hardscape or infrastructure, and the conflict cannot be resolved.

Tree is in conflict with overhead utility lines and proper pruning cannot adequately reduce the conflict without severely disfiguring the tree.

12.4.6 Notification

The Code Enforcement Officer shall notify citizens of the scheduled removal of Heritage Trees located on public property at least ten (10) days prior to removal. Notification shall be accomplished through the posting of two (2) signs, at least 8.5 x 11 inches in size, on the street and sidewalk sides of the tree, and by a public notice in the local newspaper. The signs shall remain on the tree for ten (10) days. The signs and public notice shall include, at a minimum, the following information.

Tree species, diameter, and location.

Date of posting.

Reason for removal.

Contact number for the City for more information.

12.4.7 Replacement of Trees Removed

All trees removed on public property shall be replaced within two (2) years after removal. If the site where the tree was removed is not suitable for replanting, a tree shall be planted in a suitable location as close as possible to the removal location. If there is no suitable location close to the removal location, then a tree shall be planted in a planned planting location in the vicinity. The Tree Committee shall assess a replacement fee of \$300 per tree for each tree removed to the individual, group, or agency requesting the removal.

12.4.8 Stump Removal

All stumps of street and park trees shall be removed to a depth of eight (8) inches below the surface of the ground so that the top of the stump shall not project above the surface of the ground. Sod, grass seed, or other satisfactory ground cover shall be placed and maintained on the site of the removed or ground stump. Stumps shall not be ground in cemeteries.

12.4.9 Private Trees

The City shall have the right to remove or cause to be removed trees on private property that are at a high risk for failure, have insect or disease infestations that are a threat to surrounding trees, or are otherwise nuisances that threaten the health and safety of the public.

Written Notice

Owners of premises where a nuisance tree is located shall be served a written notice from the Code Enforcement Officer either in person or by registered mail that action must be taken to abate the nuisance within 30 days. If after 30 days the nuisance has not been abated, the City shall have the right to remove the tree or cause the tree to be removed, and charge the property owner with the cost of removal and all other associated costs.

13 Damage to Public Trees

No person shall damage, destroy, remove, or otherwise harm a tree located on public property without a tree removal permit or the written consent of the Code Enforcement Officer. The City shall require

compensation for the damage or destruction of a public tree equal to the appraised value of the tree prior to the damage.

13.1 Appraised Tree Value

The appraised value of a tree shall be calculated by a Certified Arborist based on the current edition of the Guide for Plant Appraisal developed by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture.

14 Enforcement

The City's Enforcement Officer shall be responsible for enforcing all the provisions of this ordinance.

15 Violations

Except when stated otherwise in this ordinance, any person, firm, or corporation who violates any provision of this ordinance or who fails to comply with any notice issued pursuant to provisions of this ordinance, upon being found guilty of violation, shall be subject to a fine not to exceed \$500 for each separate offense. All monies collected as a result of violations shall be allocated to the City's tree program and shall be placed in the Tree Committee account.

16 Emergencies

In case of emergencies involving, but not limited to, tornadoes, windstorms, floods, hurricanes, freezes, or other natural disasters, the requirements of this ordinance may be waived by the Mayor and a quorum of four (4) City Council members.

17 Appeals

The Tree Committee shall serve as the Appeals Board for the administration of this Ordinance. Requests for an appeal shall be sent to the Tree Committee at least ten (10) days prior to a regularly scheduled meeting of the Committee. The party requesting the Appeal shall be notified within three (3) days of the Tree Committee's ruling. Actions of the Tree Committee may be appealed through the Code Enforcement Director to the Mayor and City Council for a final ruling.

Landscaping Ordinance: City of Newberry

ARTICLE 7

LANDSCAPE REQUIREMENTS

These requirements apply to all developments or redevelopments where an expansion or redevelopment of a property results in an increase in the value of the property by 50% or more of the pre-development value, or an increase of 50% or more of the building or parking areas within the City of Newberry jurisdiction, with the exception of the enlargement or repair of any single-family detached dwelling.

7-1 Landscaping Plan Requirements - In addition to the site plan requirements from the appropriate land development regulation sections, the following standards shall apply:

7-1A. North arrow and scale.

7-1B. Topographic information and final grading adequate to identify and properly specify planting for areas needing slope protection.

7-1C. The location and contours, at one (1) foot intervals, of all proposed berms.

7-1D. The location and dimensions of all existing (to remain) and proposed structures, setback line and required buffer yards, parking lots, driveways, landscaped islands and strips, sidewalks, service areas, screening, fences, walls, berms, above or underground utilities and storm drainage systems, freestanding electrical equipment, recreational facilities, and other freestanding structural features as determined necessary by the City.

7-1E. Location of plant material, including name of plants (botanical and common), installation size, spread at time of planting and at maturity, quantities of plants, and other remarks as appropriate to describe plant selection (lawns and beds of annual or perennial plants may be designated by common names only).

7-1F. Onsite and abutting land use features [within 50 feet], and use(s) of adjacent parcel(s).

7-1G. Protection plan for existing trees that are to be saved.

7-1H. Location of irrigation system, if any, to landscaped areas.

7-1I. Such other information as may be deemed necessary because of the landscaping requirements or physical characteristics peculiar to the particular development.

7-2 Standards

7-2A. Planting - Vegetation used in landscaping or screening should be planted during the dormant season to ensure the best chance of survival. A surety bond may be required to insure the installation of landscaping, especially during the growing season.

7-2B. Driver Visibility - Landscaping, including existing or planted material, shall not obstruct the view of motorists using any street, private driveway, parking aisles or the approach to any street intersection.

7-2C. Maintenance - The owner is responsible for maintaining all required plant material in good health. Any dead, unhealthy or missing plants must be replaced with vegetation that conforms to the initial planting standards of this section. All landscape planting areas shall be stabilized from soil erosion immediately upon planting and shall be maintained for the duration of the premises. In the event that plant material is severely damaged due to an unusual weather occurrence or other act of nature, the owner shall have until the end of the dormant season to replant.

7-2D. Existing Landscaping Features - Use of existing trees or shrubs to satisfy off-street landscaping is strongly encouraged. If such existing landscaping is used and consists of mature and semi-mature trees, the

Planning & Zoning Department shall have the authority to reduce the amount of required landscaping by up to fifty (50%) percent based on the following schedule. In no instance shall any paved area within a parking area extend closer to any existing tree used for landscaping than its drip line. Any parcel that is to be developed, in any district, and for all uses, shall identify any and all trees with a DBH of 8" or greater located on the lot. Every reasonable effort shall be made by the developer to save such trees.

2"-6" caliper tree
= 1 tree

7"-12" caliper tree
= 2 trees

13"-18" caliper tree
= 3 trees

19"-24" caliper tree
= 4 trees

25"+ caliper tree
= 5 trees

In order to receive credit, preserved vegetation must be in good health and condition. Trees designated to be preserved; protective barriers must be indicated on the landscaping and grading plans. If a preserved tree dies, it must be replaced with the total number of trees, which were credited to the existing tree.

Existing vegetation in the buffer may be counted toward the required plantings. The specific numbers and types of required plantings for each buffer type may be varied through Alternative Compliance, if the Zoning Administrator determines that the existing vegetation forms an effective buffer.

7-2E. General Provisions

E1. Plant Installation Standards - The following standards shall apply to all new plant material installed as a requirement of this section:

A: A variety of different species (including both deciduous and evergreen species) shall be incorporated into the site design to provide visual interest, as well as disease and pest resistance.

B: Indigenous and drought resistant plant material should be used wherever possible. If such plant materials are not used, then an irrigation system shall be installed.

C: All plant material installed shall be free from disease.

D: All plant material shall be installed in a fashion that ensures that availability of sufficient soil and water to sustain healthy growth.

E: All plant material shall be planted in a manner that is not intrusive to utilities or pavement.

F: Plant materials should be placed intermittently against long expanses of building walls, fences and other barriers to create a softening effect.

G: Ground cover plants shall be planted in a number as appropriate by species to provide fifty (50) percent surface coverage.

H: Seeding or sodding shall be provided for full coverage within the first growing season.

I: Sod shall be used where necessary to provide coverage and soil stabilization.

J: Detention/retention basins and ponds should be landscaped. Landscaping should include canopy and understory trees, evergreens, shrubbery, hedges, and/or other live planting materials.

K: Earthen berms and existing topography should, whenever practical, be incorporated into the landscape treatment of a site.

L: Automated irrigation systems, when required, shall be equipped with electronic rain gauges to prevent inadvertent watering during periods of precipitation.

E2. All new plant material shall be the following minimum sizes:

A: Small maturing (understory/ornamental) trees shall be a minimum one and one-half (1-1/2) inch caliper at installation and multi-stem varieties shall be a minimum of five (5) feet in height, as measured by ANSI Z60.1-1996 *American Standard For Nursery Stock*.

B: Large and medium maturing (canopy) trees shall be a minimum two (2) inches caliper at installation and multi-stem varieties shall be a minimum of ten (10) feet in height, as measured by ANSI Z60.1-1996 *American Standard For Nursery Stock*.

C: Evergreen trees shall be a minimum six (6) foot height at installation, as measured by ANSI Z60.1-1996 *American Standard For Nursery Stock*.

D: Shrubs shall be a minimum of 18 inches in height at installation, as measured by ANSI Z60.1-1996 *American Standard For Nursery Stock*.

E3. All plant material used must meet the standards set forth in ANSI Z60.1-1996 *American Standard for Nursery Stock*. The City Zoning Administrator shall review questions about acceptable plant materials. A list of recommended plantings is located at the end of this Article.

E4. All landscape islands must be covered with living material including grass, groundcover, and shrubs, except for marked areas directly around the trees, so that no soil is exposed. No stone or synthetic mulch is permitted. All other planting areas not covered by trees or shrubs shall be covered by grass, mulch and ground covers.

7-3. Landscaped Yards

7-3A. Street Yards - The minimum average width of all required street yards shall be ten (10) feet. Widths shall be measured perpendicular to the appropriate street right-of-way. Trees for use in street yards shall be of large maturing canopy type. Ornamental and coniferous types shall not be used to meet the requirements of this section unless conflicts with overhead utilities exist. In such case, the building official may authorize the substitution of understory trees. Landscaping requirements are shown in Table 1.

7-3B. Perimeter Yards - The minimum width of all perimeter yards shall be ten (10) feet. In situations of incompatible adjacent land uses, a buffer yard may be required in lieu of a perimeter yard (see Section 7-7). Trees used to satisfy these requirements may be of any type as provided for by this ordinance. Landscaping requirements are shown in Table 1.

7-3C. Zoning Setbacks - The required landscaped yards shall not prohibit the location of buildings, structures or shared drives otherwise specifically allowed by the underlying zoning setbacks, and may be reduced accordingly by the Planning & Zoning Department.

7-3D. Maximum Requirement - The landscaped yard should not result in requiring more than 35% of the available lot and may be reduced accordingly by the Planning & Zoning Department. Additionally, the

intent of this ordinance shall not be construed as to mean that trees are to be planted in a density that would be unhealthy or damaging.

Table 1 - Street and Perimeter Yards*

	Street Yard	Perimeter Yard
Minimum width	10 ft.	10 ft.
Trees per 100 linear feet	4	3
Shrubs per 100 linear feet	12	8

* Subject to the exemptions of 7-3 C and D.

7-4 Parking Lots

7-4A. The impervious surface of the parking area and access area shall be separated from the street right-of-way and property lines by a landscaped strip at least ten feet in width. Ingress and egress shall be provided through driveway openings only. In the event a parking lot is adjacent to a parking lot or driveway on another parcel, the required landscaped strip along the common property line between the two areas may be waived by the Planning & Zoning Department, or the Planning Commission, if it will result in less traffic congestion on adjoining streets because of improved traffic circulation between the two parking lots or a reduction in the number of curb cuts.

7-4B. The parking lot shall be constructed so that spaces are grouped into bays. At the end of each bay for 8 or more cars, a landscaped island of at least nine feet in width and 15 feet in length shall be built to separate the bays from each other or from traffic lanes. When the parking bays contain double rows of parking spaces, the landscaped island shall be increased to nine feet in width and 30 feet in length. (Figure 7.11) A parking bay may not be constructed to a length of more than 180 feet without constructing a landscaped island. The Planning & Zoning Department may approve islands, which vary from 9' x 15' or 9' x 30' rectangles in order to provide desirable geometric design features such as rounded corners and angles to facilitate maneuvering of automobile traffic.

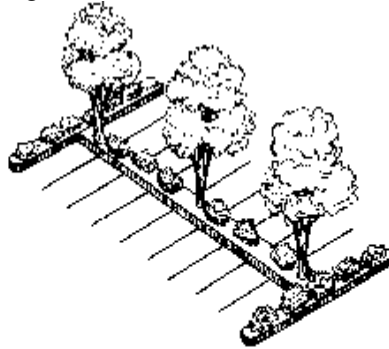


Figure - Attractive landscaping relieves the monotony and "sea of asphalt" appearance of large parking lots.

7-4C. The landscaped areas within the parking lot shall not be less than 4% of the impervious surface area of the parking lot. The perimeter landscaped strip and street yards required shall be excluded from the calculations of the minimum landscaped percentage.

7-4D. A minimum of one tree shall be provided within the landscaped areas in the parking lot for each 10 parking spaces in the lot. No trees identified as large maturing shall be planted within 20 feet of an electrical transmission or distribution line. Existing trees and natural vegetation shall be retained wherever possible, particularly where they border adjacent property. All parking facing street frontage shall plant shrubs to screen the area (not to exceed three feet at mature height at entrances and sight distance triangles) or create berms. No gaps greater than five (5) feet are allowed in a screen. All applications for development review or zoning permits shall be accompanied by a landscaping plan.

7-5 Landscape Maintenance

7-5A. The owner, or his agent, shall be responsible for the maintenance, repair and replacement of all landscaping materials and barriers as may be required by the provisions of the Land Development Regulations.

7-5B. No plant material over 18 inches in height at maturity or structures of any kind shall be placed within the sight distance triangle or sight visibility triangle.

7-5C. Fences and walks shall be maintained in good repair.

7-6 Service/Utility Areas

This section shall apply to all service areas which either present safety hazards or detract from the aesthetics of the community, or both; including but not limited to, loading docks, garbage collection sites, exposed utility fixtures, HVAC equipment, tanks, etc.

All service areas affected by this article shall be provided with a visual screen consisting of fences or landscaping, or both, designed and installed to screen the area from view from any public street or adjoining property and shall meet or exceed the minimum standards required below:

- A.** The screening must be at least six (6) feet in height or the height of the object to be screened;
- B.** The screening must extend along the entire perimeter of the service area, except for necessary access.
- C.** Fencing shall be designed to relate well to the principal building as to materials and colors. Fences must be constructed of brick, masonry, or wood and shall require appropriate plantings.

Garbage collection sites (dumpsters, compactors) shall be shielded from sight by screening as outlined above and shall be eighty percent (80%) opaque. This screening shall also be provided to deter unauthorized access.

7-7 Bufferyards

When land is developed and the adjacent property contains an unlike land use, bufferyards shall be provided along all side and rear property lines to insulate adjacent properties from adverse impacts. No structure or parking lot shall be permitted within a required bufferyard; however, driveways and other passive activities may utilize these spaces. All shrubs used for bufferyards shall be evergreen unless otherwise approved by the Planning & Zoning Department. Shrubs must be 18 inches in height at installation. See Table 2 for specific planting requirements.

Bufferyard Types

7-7A. Type A - Shall apply when any use is similar to an adjacent use or has only a slight impact on the adjacent use. This is similar to the standard street yard requirement. See Table 3 for specific zoning uses to which this type of buffer shall apply.

7-7B. Type B - Shall apply when any use is somewhat different from an adjacent use or has a moderate impact on adjacent uses. See Table 3 for specific zoning uses to which this type of buffer shall apply.

7-7C. Type C - Shall apply when any use is clearly different from an adjacent use or has a definite impact on adjacent uses. See Table 3 for specific zoning uses to which this type of buffer shall apply.

7-7D. Type D - Shall apply when any use is incompatible from an adjacent use or has a large impact on adjacent uses. See Table 3 for specific zoning uses to which this type of buffer shall apply.

7-7E. Type E - Shall apply when any use is incompatible from or has a severe impact on adjacent uses. See Table 3 for specific zoning uses to which this type of buffer shall apply.

	Low Impact	Medium Impact		High Impact	
	Type A	Type B	Type C	Type D	Type E
Minimum Width	10 ft	15 ft	20 ft	30 ft	50 ft
Trees per 100 linear ft.	4	6	8	10	12
Shrubs per 100 linear ft.	12	18	30	40	50

Note: The minimum width may be reduced by 25% if a solid wall or fence, at least six feet in height, is constructed, a 50% width reduction may be granted with the installation of a brick or masonry wall or a berm with a minimum height of four (4) feet. Maximum Requirement - The bufferyard should not result in using more than 35% of the available lot and may be reduced accordingly by the Planning & Zoning Department.

Proposed Land Uses	Existing Adjacent Land Uses							
	Dwellings			Mixed Uses	Mobile Homes	Religious, Educational, Recreational, Nursing Home, Office, Institutional	Commercial	Industrial
	SF [R-10]	SF [R-8]	MF [R-6]					
Single-family detached	X	X	A	A	A	A	B	C/D
Townhouses/SF-ATT	A	A	A	A	A	A	A	C/D
Multi-family	B	A	X	X	A	A	A	B/C
Mobile Homes	C	C	C	C	X	C	C	B/C
Religious, Educational, Recreational, Nursing Home, Office, Institutional	C	B/C	B	A	C	X	X	C
Commercial	C/D	B/C	B/C	A	B/C	X	X	X
Industrial	E	E	D/E	C	D/E	C	B	X

The Planning and Zoning Staff may decide dual letters.
 X – Bufferyard not required, however, perimeter yard may be required per Section 7-3 of these regulations.

7-8 Enforcement of Landscape Requirements - All required landscaping materials shall be in place prior to the time of issuance of a final Certificate of Occupancy. In periods of adverse weather conditions, a temporary Certificate of Occupancy may be issued, subject to the posting of a cash escrow or irrevocable letter of credit in an amount equal to one and one-half (1-1/2) times the estimated cost of the landscaping, with said estimated cost to be certified by a registered landscape architect. A contract letter or bill of sale from a landscape company or nursery for the required landscape materials would be accepted in lieu of a cash escrow or irrevocable letter of credit. The cash escrow or irrevocable letter of credit may be forfeited

if the landscaping is not completed within eight (8) months after the issuance of the temporary Certificate of Occupancy. Forfeiture of any cash escrow or irrevocable letter of credit shall not relieve the owner of the responsibility to complete the required landscaping.

7-9 Definitions

Caliper. In the case of trees, the distance around the trunk measured eighteen (18) inches above the ground.

Loading Area. Any unenclosed area used for loading or unloading vehicles.

Shrub. Any hard-wooded perennial plant of a species which normally reaches a height between twelve (12) inches and eight (8) feet, and which is between eighty (80) and one hundred (100) percent opaque at maturity.

Tree, Canopy. Any tree of a species which normally reaches a height of thirty (30) feet or more and a crown spread of twenty (20) feet or more at maturity.

Tree, Understory. Any tree of a species that normally reaches a height of between eight (8) and thirty (30) feet and a crown spread of less than twenty (20) feet at maturity.

7-10 Recommended Trees and Shrubs

The following recommended trees and shrubs are to be used to meet City landscaping requirements. Their selection is based on information gathered from the Clemson University Cooperative Extension Service for native and viable plantings in South Carolina.

SHADE TREES, DECIDUOUS:	
Botanical Name	Common Name
Acer barbatum Acer palmatum Acer rubrum cv. 'Columnare' cv. 'October Glory' cv. 'Autumn Flare' Acer saccharum	Southern Sugar Maple Japanese Maple Red Maple Columnare October Glory Autumn Flare Sugar Maple
Liquidamber styraciflua	American Sweet Gum
Prunus serotina	Black Cherry
Platanus occidentalis x acerifolia cv. 'Columbia' cv. 'Liberty' cv. 'Bloodgood'	Sycamore (American Planetree) Sycamore (London Planetree) Columbia Liberty Bloodgood
STREET TREES:	
Quercus alba Quercus falcata Quercus nigra Quercus palustris Quercus phellos Quercus velutina Quercus virginiana	White Oak Southern Red Oak Water Oak Pin Oak Willow Oak Black Oak Live Oak (evergreen oak)
Ulmus americana cv. 'New Harmony' cv. 'Valley Forge' cv. 'American Liberty' Ulmus parvifolia	American Elm New Harmony Valley Forge American Liberty Chinese/Lacebark Elm

SHADE TREES, DECIDUOUS:	
Botanical Name	Common Name
Acer barbatum Acer palmatum Acer rubrum cv. 'Columnare' cv. 'October Glory' cv. 'Autumn Flare' Acer saccharum	Southern Sugar Maple Japanese Maple Red Maple Columnare October Glory Autumn Flare Sugar Maple
Liquidamber styraciflua	American Sweet Gum
Prunus serotina	Black Cherry
Platanus occidentalis x acerifolia cv. 'Columbia' cv. 'Liberty' cv. 'Bloodgood'	Sycamore (American Planetree) Sycamore (London Planetree) Columbia Liberty Bloodgood

STREET TREES:	
Quercus alba Quercus falcata Quercus nigra Quercus palustris Quercus phellos Quercus velutina Quercus virginiana	White Oak Southern Red Oak Water Oak Pin Oak Willow Oak Black Oak Live Oak (evergreen oak)
Ulmus americana cv. 'New Harmony' cv. 'Valley Forge' cv. 'American Liberty' Ulmus parvifolia	American Elm New Harmony Valley Forge American Liberty Chinese/Lacebark Elm

EVERGREEN/CONIFEROUS TREES	
Botanical Name	Common Name
Cryptomeria japonica cv. 'Yoshino' cv. 'Elegans'	Japanese Cryptomeria Yoshino Elegans
x Cupressocyparis leylandii cv. 'Castlewellan' cv. 'Leighton Green' cv. 'Haggerston Gray' cv. 'Naylor's Blue' cv. 'Silver Dust' cv. 'Greenspire'	x Cupressocyparis leylandii Castlewellan Leighton Green Haggerston Gray Naylor's Blue Silver Dust Greenspire
Juniperus ashei Juniperus virginiana Juniperus silicicola	Ozark White Cedar or Ashe Juniper Eastern Red Cedar Southern Red Cedar
Pinus elliottii Pinus glabra Pinus palustris Pinus strobes cv. 'Compacta' cv. 'Fastigiata' cv. 'Pendula' cv. 'Nana' Pinus taeda Pinus virginiana Pinus mugo Pinus thunbergiana cv. 'Compacta' cv. 'Globosa' cv. 'Iseli'	Slash Pine Spruce Pine Longleaf Pine White Pine Compacta Fastigiata Pendula Nana Loblolly Pine Virginia Pine Mugo Pine Japanese Black Pine Compacta Globosa Iseli

ORNAMENTAL TREES:	
Botanical Name	Common Name
Acer ginnala	Amur Maple
Cercis canadensis var. canadensis 'Alba' cv. 'Royal White' cv. 'Forest Pansy' cv. 'Flame'	Redbud or Judas Tree Alba Royal White Forest Pansy Flame
Cornus florida Cornus kousa Cornus mas	Flowering Dogwood Kousa Dogwood Cornelian Cherry Dogwood
Cyca revoluta	Sago Palm
Ilex opaca cv. 'Dan Fenton' cv. 'Jersey Delight', 'Jersey Princess', 'Jersey Knight' cv. 'Merry Christmas'	American Holly Dan Fenton Jersey Delight, Jersey Princess, Jersey Knight Merry Christmas
Lagerstroemia indica Lagerstroemia fauriei	Crape Myrtle (US) Crape Myrtle (Japan)
Magnolia grandiflora Magnolia stellata Magnolia virginiana Magnolia x soulangiana	Southern Magnolia Star Magnolia Sweetbay Magnolia Saucer Magnolia
Malus floribunda Malus hupehensis Malus sargentii	Japanese Flowering Crabapple Tea Crabapple Sargent Crabapple
Butia capitata Chamaerops humilis Rhapidophyllum hystrix Sabal minor Sabal palmetto Serenoa repens Trachycarpus fortunei Washingtonia filifera Washingtonia robusta	Jelly Palm, Pindo Palm Mediterranean Fan Palm Needle Palm Dwarf Palmetto Cabbage Palm (SC Palmetto) Saw Palmetto, Scrub Palm Windmill Palm California Fan Palm Mexican Fan Palm

Prunus americana Prunus angustifolia Prunus campanulata Prunus cerasifera ‘Atropurpurea’ ‘Thundercloud’ Prunus glandulosa Prunus mexicana Prunus mume Prunus serrulata ‘Amanogawa’ (‘Erecta’) ‘Kwanzan’ ‘Shirofugen’ ‘Shirotae’ (‘Mt. Fugi’) ‘Shogetsu’ (‘Shimidsu’) Prunus subhirtella ‘Autumnalis’ ‘Pendula’ Prunus x cistena Prunus x incamp ‘Okame’ Prunus x yedoensis ‘Akebono’ (Daybreak) ‘Shidare Yoshino’	American Plum Chickasaw Plum Taiwan Cherry Cherry Plum Atropurpurea Thundercloud Dwarf Flowering Almond Mexican Plum Japanese Flowing Apricot Japanese Flowering / Oriental Cherry Amanogawa (‘Erecta’) Kwanzan Shirofugen Shirotae (‘Mt. Fugi’) Shogetsu (‘Shimidsu’) Higan Cherry Autumnalis Weeping Higan Cherry Purple-leaf Sand Cherry ‘Okame’ Cherry Yoshino Cherry Akebono (Daybreak) Weeping Yoshino Cherry
Pyrus calleryana ‘Aristocrat’ ‘Bradford’ ‘Capital’ ‘Chanticleer’	Callery Pear varieties Aristocrat Pear Bradford Pear Capital Pear Chanticleer Pear

SHRUBS, DECIDUOUS:	
Botanical Name	Common Name
Berberis thunbergii Berberis x mentorensis	Japanese Barberry Mentor Barberry
Cornus sanguinea Cornus sanguinea ‘Viridissima’	Bloodtwig Dogwood Yellowtwig Dogwood
Euonymus alatus Euonymus americanus	Winged Euonymus American Euonymus
Forsythia x intermedia var. ‘Beatriz Farrand’ var. ‘Karl Sax’ var. ‘Lynwood’ var. ‘Spectabilis’	Forsythia varieties Beatriz Farrand Karl Sax Lynwood Spectabilis
Hydrangea macrophylla cv. ‘hortensias’ cv. ‘lacecaps’ Hydrangea quercifolia Hydrangea arborescens	French Hydrangea Oakleaf Hydrangea Smooth or Snowhill Hydrangea
Rhododendron (Azalea) R. arborescens R. calendulaceum R. canescens R. periclymenoides R. prunifolium	Azalea Types Sweet Azalea Flame Azalea Piedmont Azalea Pinxterbloom Azalea Plumleaf Azalea

R. viscosum x Knap Hill x Exbury	Swamp Azalea Knap Hill Azalea Exbury Azalea
Spirea vanhouttei Spirea jaonica Spirea cantoniensis Spirea thunbergii Spirea x bumalda	Vanhoutte Spirea Japanese Spirea Reeves Spirea Baby's Breath Spirea Bumalda Spirea
Viburnum V. acerfolium V. burkwoodii 'Mohawk' V. burkwoodii 'Chenault' V. carlesii V. cassinoides V. dilatatum V. juddii V. opulus 'Compactum' V. opulus 'Nanum' V. plicatum tomentosum V. setigerum V. trilobum	Viburnum varieties Maple-leaf viburnum Mohawk Chenault Koreanspice Wither viburnum Arrowwood Judd viburnum Compact European Cranberry Nanum Doublefile viburnum Tea viburnum American Cranberry bush

SHRUBS, EVERGREEN:	
Botanical Name	Common Name
Aucuba japonica var. Variegata var. Crassifolia var. Serratifolia	Japanese Aucuba Gold Dust Plant (female) Crassifolia (male) Serratifolia
Rhododendron (Azalea) Southern Indica Kurume Kaempferi Satsuki Gable Glen Dale	Azalea Southern Indica Kurume Kaempferi Satsuki Gable Glen Dale
Berberis julianae cv. 'Nana' cv. 'Spring Glory'	Wintergreen Barberry Nana Spring Glory

Buxus sempervirens cv. 'Angustifolia' cv. 'Argenteo-variegata' cv. 'Aureo-variegata' cv. 'Bullata' cv. 'Handsworthiensis' cv. 'Northland' Buxus sempervirens 'Suffruticosa' Buxus microphylla cv. 'Compacta' cv. 'Wintergreen' var. japonica var. koreana	American Boxwood Angustifolia Argenteo-variegata Aureo-variegata Bullata Handsworthiensis Northland English Boxwood Little Leaf Boxwood Kingsville Dwarf Wintergreen Japanese Korean
Camellia japonica Camellia sasanqua Camellia oleifera	Common Japanese Camellia Sasanqua Camellia Tea-oil Camellia
Euonymus japonicus cv. 'Aureo-marginata' cv. 'Aureo-variegata' cv. 'Microphylla' cv. 'Microphylla Albovariegatus' cv. 'Silver King' cv. 'Silver Queen' Euonymus kiautschovicus	Evergreen Euonymus Golden Euonymus Goldspot Euonymus Box-leaf Euonymus Varigated Box-leaf Euonymus Silver King Silver Queen Spreading Euonymus
Gardenia jasminoides 'August Beauty' 'Chuck Hayes' 'First Love' 'Golden Magic' 'Kleim's Hardy' 'Mystery' 'Daisy'	Common Gardenia or Cape Jasmine August Beauty Chuck Hayes First Love Golden Magic Kleim's Hardy Mystery Daisy
Ilex crenata Ilex cornuta Ilex glabra Ilex vomitoria 'Nana' or 'Dwarf Yaupon' x 'Nellie R. Stevens'	Japanese Holly varieties Chinese Holly varieties Inkberry Yaupon Holly Nana or Dwarf Yaupon Holly Nellie R. Stevens Holly
Juniperus chinensis 'Pfitzerana' 'Armstrongii' 'Gold Coast' 'Heitzii' 'Kaizuka' 'Mint Julep' Juniperus squamata 'Blue Star' Juniperus chinensis 'Blue Point' 'Robust Green' 'Spartan' Juniperus scopulorum 'Gray Gleam' 'Pathfinder' 'Shyrocket' 'Wichita Blue'	Juniper Shrubs Pfitzer Juniper Armstrong Juniper Gold Coast Juniper Hetz Chinese Juniper Hollywood Juniper Mint Julep Blue Star Juniper Columnar Juniper types Blue Point Robust Green Spartan Gray Gleam Pathfinder Shyrocket Wichita Blue
Kalmia latifolia	Mountain Laurel

Laurus nobilis	Laurel or Sweet Bay
Ligustrum japonicum	Japanese Privet
‘Rotundifolium’	Round-leaf Japanese Privet
‘Howard’	Howard Privet
‘Recurvifolium’	Wavy-leaf Japanese Privet
‘Silver Star’	Silver Star
‘Variegatum’	Variegated Japanese Privet
Ligustrum lucidum	Glossy Privet
‘Compactum’	Dwarf Glossy Privet
‘Davidson Hardy’	Davidson Hardy
‘Tricolor’	Tricolor
‘Macrophyllum’	Macrophyllum
Ligustrum ovalifolium	California Privet
‘Aureum’ or ‘Variegatum’	Aureum or Variegatum
Ligustrum sinense ‘Variegata’	Variegated Chinese Privet
Ligustrum vicaryi	Vicary Golden Privet
Myrica cerifera	Wax Myrtle
Myrica pensylvanica	Northern Bayberry
Nandina domestica	Nandina or Heavenly Bamboo
Prunus laurocerasus	Cherry or English Laurel
‘Otto Luyken’	Otto Luyken
‘Schipkaensis’	Schipka Laurel
‘Zabeliana’	Zabel Laurel
Prunus caroliniana	Carolina Cherry Laurel
Prunus lusitanica	Portugal Laurel
Rhaphiolepis	Indian Hawthorn
Viburnum davidii	David Viburnum
Yucca aloifolia	Spanish Bayonet
Yucca filamentosa	Adam’s Needle
Yucca flaccida	Weakleaf Yucca
Yucca gloriosa	Spanish Dagger
Yucca smalliana	Bear Grass
Yucca recurvifolia	Curve-leaf Yucca

Other species may be acceptable upon approval by the City Zoning Administrator

Tree Protection Ordinance: Town of McClellanville
(Municipality with Fewer than 600 Residents)

ARTICLE IV

TREE PRESERVATION

1. Purpose

Trees are an essential natural resource, an invaluable economic resource, and priceless aesthetic resource. Trees play a critical role in purifying air and water, providing wildlife habitat, and enhancing natural drainage of stormwater and sediment control. They also help conserve energy by providing shade, and shielding against noise and glare. Trees promote commerce and tourism by buffering different land uses and beautifying the landscape.

Trees enhance the lowcountry quality of life as a sacred and inseparable part of its historical legacy. Consequently, McClellanville intends to exercise its state-mandated powers to enhance the health, safety and welfare of its citizens with comprehensive regulations designed to preserve trees.

2. Scope

The provisions of this chapter in their entirety shall apply to all real property in the Town of McClellanville.

TREE PRESERVATION

a. Significant Trees:

The removal of significant trees is prohibited. A significant tree is one that has a diameter breast height equal to or greater than 24 inches.

b. Other Required Trees:

1. Border Area:

Within the border area of any lot all trees of eight (8) inches of greater diameter breast height (DBH) (protected trees) are to be preserved, with the exception of areas to be developed with necessary driveways, roads, easements and drainage or other structures permitted by and constructed in accordance with applicable ordinances of the Town.

2. Interior Portion of Lot:

Within the remaining interior portion of a lot a sufficient number of trees of eight (8) inches or greater DBH shall be preserved meeting one of the following requirements:

Less than twenty (20) trees with a combined DBH equal to or greater than one hundred and sixty (160) inches per acre

or

twenty (20) trees per acre.

c. For every protected tree retained in the border area, one (1) tree of an equal or smaller DBH (excluding significant trees) required in the interior portion of the lot may be removed, up to a maximum of

ten (10) such trees or sixty (60) inches combined DBH provided that trees remaining in the interior portion equal or exceed:

ten (10) trees per acre
or
one hundred (100) inches combined DBH per acre.

d. Requirements for the interior portion of a lot may be reduced by planting of trees in border areas, as approved by the Building Inspector or designee, provided that trees remaining in the interior portion of a lot equal or exceed the requirements in (b) above.

Replacement/planting of trees in the border shall be according to the following schedule:

<u>DBH of Tree Removed from Interior</u>	<u>Number of Replacement Trees to be Planted in Border Area</u>
8 inches or less	1
8 > 16 inches	2
16 > 24 inches	3
24 or greater inches	Bd of Adjustment must approve

removal and replacement schedule

4. TREE REMOVAL

Clear Cutting Prohibited:

No site clearing, filling, grading, materials delivery or construction shall be initiated on any lot without permit first being secured from the Zoning Administrator.

Nothing herein shall be construed, however, to prohibit such clearing or altering as maybe necessary for purposes of conducting pre-development studies, such as geo-technical tests, soil borings, percolation tests, tests related to the determination of a critical line or wetland or similar tests.

b) EXEMPTIONS:

The following activities are exempt:

bonafide timber harvesting on land having an agricultural assignment.

trees certified by nursery as diseased, dead or dying; provided however, that if the condition of such tree is do [sic] to the neglect or malfeasance of the owner, the Board of Adjustment may require the replacement for such trees.

c) PROTECTION DURING CONSTRUCTION

Protective barriers shall be placed around all required trees in or near development areas. Prior to the start of any development or construction activity, the owner, or his agent, must present to the Zoning Administrator a plan protecting trees as development occurs. Barricades must be constructed of wood, plastic fencing or such other materials as may be approved by the Zoning Administrator, and shall remain in place until all development activities are complete. During development, the area within the protected barricade shall remain free of all building materials, dirt, fill or other construction debris, vehicles and any other activity.

5. Variance:

Upon demonstration of hardship, the Board of Adjustment may vary the provisions of this Article. In considering hardship, the Board of Adjustment, in addition to other factors, must also consider whether the trees, as situated, prevent all reasonable site configurations, and that removal of trees is the only reasonable means by which building, zoning, subdivision, health, public safety or other requirements of the Town can be met.

6. Emergency Provisions:

In the event that a tree poses a serious and imminent threat to public safety due to death, disease or damage resulting from emergencies including, but not limited to fires, flooding, storms, natural disasters, negligence, the Board of Adjustment or designee may waive requirements of this chapter. The Board of Adjustment or designee may require replacement of required trees which are removed where it is determined that death or disease of the tree resulted from negligence or malfeasance of the owner.

7. Violations and Penalties:

Any person, firm, organization, society, association or corporation, or any agent or representative thereof who commits, participates, or assists in removal of trees in violation of this Ordinance shall be guilty of a misdemeanor and upon conviction, punishable pursuant to Article I, Section 3, and shall also be subject to the requirements of Section 9 hereof.

Should violations be noted during the course of a project or at final inspection, the Zoning Administrator may cause permits to be revoked and withhold certificates of occupancy. No further activity shall be had on the site until such time as the Board of Adjustment determines if remedial actions are necessary, including by not limited to: replacement of illegally removed trees; replacement of required trees which are damaged, deceased [sic], dying, or dead; remedial actions to protect trees during construction.

8. Site Previously Cleared:

Sites cleared of trees prior to the adoption of this Ordinance, and which do not meet the requirements of this Ordinance, or which have been cleared subsequently for activities exempted from this Ordinance, shall incorporate, upon any change in use of the site, replacement trees, the combined DBH of which equals or exceeds forty (40) inches per acre.

9. Trees Removed without Permits:

a. Generally:

Where sites are cleared of trees in violation of this chapter, trees shall be replaced in accordance with a replacement schedule approved by the Board of Adjustment.

The Board of Adjustment or designee shall recommend the number, species, DBH and location of replacement trees, according to the following criteria:

1. combined DBH of which equals or exceeds eighty (80) inches per acre, and
2. one-half of individual replacement trees are four (4) inches or greater DBH.

b. Significant Trees:

1. Where significant trees have been removed in violation of this chapter or where removal is necessitated at any time due to acts of negligence, trees shall be replaced in accordance with a replacement schedule approved by the Board of Adjustment. The Board of Adjustment or designee shall recommend the number, species, DBH, and location of replacement trees, according to the following criteria:

combined DBH of replacement trees is equal to or greater than three (3) times the DBH of the tree removed; or

individual replacement trees are of the largest transplantable DBH available.

10. Prior to the removal of any tree eight inches, or greater, DBH, the owner shall first secure a permit from the Building Inspector.

Tree Protection Ordinance: Town of Bluffton
(Municipality with 600 to 2999 Residents)

Section 4.14 Tree Protection Standards

It is the expressed intent of these *Tree Protection Standards* that all site planning and design for development of land be undertaken with a survey of trees on the property and that the final placement of buildings, structures, roads, utilities, and other features minimizes the removal of existing trees on the property.

No development shall be undertaken, except in conformance with the provisions of this Section.

Responsibility for administering this Tree Ordinance is that of the Town's designated Planner.

The cutting of trees for sole purpose of clearing land or offering land for sale shall be prohibited.

No person shall cut, destroy, cause to be destroyed, move, or remove any disease-free tree with a trunk diameter of eight (8) inches or more (twenty-five (25) inch circumference), measured three (3) feet up from the base in conjunction with or preparation for any development activity until such removal has been approved in accordance with the provisions of this Ordinance.

The saving of smaller specimen and desirable trees is encouraged.

Removal of endangered or valued trees will not be permitted. No person shall cut, destroy, cause to be destroyed, move, or remove any tree with a trunk diameter at breast height (dbh) of eight (8) inches (twenty-five (25) inch circumference) or larger, or any endangered or valued tree with a trunk diameter of four (4) inches (dbh) or larger in preparation for, anticipation of, or in conjunction with any development activity until such removal has been approved as part of the overall site development approval process of this Ordinance. The saving of existing trees less than the protected size is encouraged and may be used in some cases to meet the requirements of this Section pertaining to replacement of trees that are approved for removal. Upon written certification of a Certified Arborist or Forester and upon Development Plan approval, sick or diseased trees may be removed. Trees included in this category are as follows:

American Elm	<i>Ulmus Americana</i>
American Holly	<i>Ilex opaca</i>
Bald Cypress	<i>Taxodium distichum</i>
Laurel Oak	<i>Quercus laurifolia</i>
Live Oak	<i>Quercus virginiana</i>
Loblolly-Bay	<i>Gordonia lasianthus</i>
Pecan	<i>Carva illinoensis</i>
Pond Cypress	<i>Taxodium Dist. Carnutans</i>
Spruce Pine	<i>Pinus glabra</i>
Southern Magnolia	<i>Magnolia grandiflora</i>

Sweet Bay *Magnolia virginiana*

Yellow Poplar *Liriodendron tulipifera*

As a condition of approval from this Ordinance, the Applicant may be required to plant replacement trees for trees approved for removal, as part of the final plan. In requiring replacement trees, the following will be considered:

The intended use of the property;

The existing or pre-development tree coverage;

Size and types;

Number, size, type, and location of natural trees proposed for preservation by the Applicant; and

Grading, road building, parking, and drainage requirements of the project.

A survey of all trees with a trunk diameter of eight (8) inches (dbh) and larger and all Dogwoods, Redbuds, and Magnolia trees with a trunk diameter of four (4) inches (dbh) and larger, shall be made within the area to be modified from its natural state and seventy-five (75) feet beyond in each direction or to the property lines, whichever is less. The location, type, and size of trees shall be indicated on the Site Plan, with surveys of all trees conducted and certified either by a Registered Land Surveyor or Engineer. A survey of all trees shall be conducted and certified by a Registered Land Surveyor or Engineer and include the type and size of trees. Tree surveys for streets shall extend twenty-five (25) feet beyond either side of the street right-of-way lines.

Those trees designated for preservation, in accordance with the provisions of this Ordinance and as shown on an approved Landscape Plan, shall be marked with bright ribbons encircling the tree trunk at a height of four (4) feet above the ground. A four (4) foot high barricade will be constructed around the tree at the drip line, prior to the start of construction.

The requirement for a tree survey is waived in the case of golf course construction, or when preliminary site evaluation by the Applicant reveals the ability to accomplish the proposed project without removal of any trees eight (8) inches in diameter or larger. In the latter case, the Applicant shall submit a written statement that no trees will be removed and his permit will indicate "No Tree Removal" as a condition thereof.

No development shall be undertaken and no development will be approved that involves cutting or removal of more than seventy-five (75) percent of trees eight (8) inches and larger on the development site.

No development shall be undertaken that directly or indirectly increases the erosion of land or its potential for erosion.

The Applicant shall take all reasonable measures to reduce soil loss and contain sediment during construction. Exposed soil shall be stabilized prior to final inspection.

While all types of trees are protected under these standards, special emphasis is placed on preservation of large trees and certain significant and more valued species listed herein. The highest site design priority shall be given to preservation of Live Oaks with a trunk diameter of twenty-four (24) inches or larger. Removal of this valued tree is highly discouraged, and will only be approved upon the determination of the Development Review Team that all responsible design alternatives have been explored by the Applicant and removal cannot be avoided. If a twenty-four (24) inch or larger significant tree must be removed, the planting of new trees of the same species, or Live Oak trees if the same species is not available, totaling the same number of inches in diameter will be required, only fifty (50) percent of which may be allowed to be used for credit towards the minimum requirement of fifteen (15) trees per acre. For development sites that

do not contain any or very few of these significant trees, design emphasis should be shifted to preserving other species present.

Significant Trees

American Holly

Bald Cypress

Black Oak

Black Tupelo

Cedars

Dogwood (four (4) inches)

Hickory

Live Oak

Redbud (four (4) inches)

Red Maple

Southern Red Oak

Southern Magnolia (four (4) inches)

Sycamore

Walnut

Pecan

Palmetto (may be relocated on site)

Any other species twenty-four (24) inches diameter or larger.

The minimum allowable post-development tree cover for all development shall be fifteen (15) existing trees, eight (8) inches (dbh) and larger, per acre of disturbed area. Pairs or groups of trees with trunk spacing or separation of five (5) feet or less shall count as one (1) tree towards meeting the minimum allowable coverage. Each tree with a trunk diameter of thirty-six (36) inches (dbh) or larger may count as two (2) trees towards meeting the minimum allowable coverage. "Disturbed area," shall mean the limits of the site project activity (buildings, roads, parking areas, retention ponds and the like) including the required front, rear, and side yard setbacks or to the property line, whichever is less.

In those cases where site design alternatives cannot achieve the minimum allowable existing tree cover or where pre-development tree cover is less than the prescribed minimum, the Developer shall be required to plant two (2) replacement hardwood trees of the same type cut down, or one (1) Live Oak tree with a minimum trunk diameter of two and one half (2½) inch (dbh) for each existing protected tree under the minimum requirement of fifteen (15) trees per acre of disturbed area.

Proposed or required planted or replacement tree design, types, and locations, shall be prepared by a Certified Arborist or Landscape Architect and should take into account site soil types and conditions,

existing tree species to be preserved and their locations, and the species to be planted that would be best suited to site conditions, proposed activities, and impervious surface areas.

Existing significant hardwood trees and dogwood trees, less than eight (8) inches (dbh) but not less than two and one half (2½) (dbh), may be used in place of or relocated on-site to meet prescribed minimums in lieu of purchased trees. Planted or re-located trees should be appropriately designated as such on the Site Plan and placed so as to enhance the overall landscaping of the site. Required replacement trees in residential subdivisions should be planted on the residential lots outside of the assumed building area.

In commercial projects, replacement trees should be used in landscaped islands to enhance parking area and areas of the project site most visible to traveled thoroughfares.

Where the Development Review Board determines that a reduced plantback is necessary due to the size and shape of property and/or structures and/or other viable site constraints, such reduction shall be subject to a general forestation fee. This fee shall be the actual and verified cost of the required tree plantback, per tree reduced, and shall be paid to the Treasurer of Beaufort County before final approval is given for the Development Plan. The funds collected through this forestation fee shall be used by Beaufort County to plant trees and other landscaping in highway medians, along-side roads, and on other public properties as deemed appropriate.

The survival of any tree planted and/or replanted as above, shall be guaranteed with a tree maintenance and replacement bond for a period of one (1) year. The required bond amount shall equal one hundred twenty-five (125) percent to replace each tree that is planted, replanted, or relocated on the development site.

All trees preserved, planted, or relocated on the site must be protected and nurtured for the life of the project approved. Any tree lost subsequent to development approval and certification of compliance shall be replaced with two and one half (2½) (dbh) tree of the same type or Live Oak with a minimum height of twelve (12) feet at planting. In the event any twenty-four (24) inch (dbh) or larger Live Oak is subsequent to development, it shall be replaced with an equivalent number of caliper inches of Live Oaks each with a minimum diameter of two and one-half (2½) (dbh) and height of twelve (12) feet.

Tree Protection Zones shall be established and maintained for each tree preserved or planted on a development site. The area within the Tree Protection Zone must be open and unpaved except where approved perforated pavers may be used or tree aeration systems and tree wells installed.

If a Developer can demonstrate that a Tree Protection Zone less than that described can be designed so as not to injure the tree under consideration, based upon the use of a Certified Arborist, the Development Review Board may approve the alternate Tree Protection Zone.

Maintaining open space around the base of a tree is one of the most important factors in promoting the health and longevity of the tree. The root system within the drip line is generally considered to be the Critical Root Zone.

A permanent Tree Protection Zone surrounding both preserved and planted trees shall be established. This Tree Protection Zone shall apply during the construction phase as well.

Tree Protection Zones should vary according to the species, size, location, and health of a tree and be designed for maximum flexibility of shape and minimum effectiveness of size. However, where compelling information to the contrary regarding a particular tree in its particular setting is not available, the minimum Tree Protection Zones shall be established as follows:

For existing trees a circle with a radius of one-half (½) foot for every inch (dbh) or five (5) feet, whichever is greater (the circle of protection may be offset as much as one-third (⅓) of its total diameter);

For newly planted understory trees, a circle with a radius two (2) feet and a newly planted overstory tree, a circle with a radius of three (3) feet; and

For Palmetto trees, a circle with a radius of two (2) feet.

The size of the protection zone may be reduced, the shape adjusted, or other encroachments may occur within the zone where any of the following measures or techniques are deemed to sufficiently mitigate such a change and certified as acceptable by a reputable tree service, arborist, or other qualified party:

Limb and root pruning;

Fertilization;

Aeration;

Irrigation;

Restoring the natural grade of the soil;

Tree feeders;

Porous paving materials; and

Tree well.

In general, where a tree well is used, it should encompass at least half (fifty (50) percent) the area beneath the canopy of the tree and extend in every direction, no less than half way from the trunk to the tree's drip line.

Prior to commencing construction or any site alterations, a conspicuous four (4) foot high barrier sufficiently prominent visually to prevent encroachment by people and vehicles, shall be erected around the protection zone and approved by the Building Official. Barriers may be erected around groupings of trees, where feasible. Use of orange polyethylene safety fencing or a similar material is recommended. The barrier shall remain in place until the Certificate of Occupancy is issued.

Passive forms of tree protection, such as continuous rope or flagging, may be used to mark tree save areas, which are remote from areas of land disturbance, if approved by the Building Official. Signage designating such areas shall be put in place.

No building materials, dirt, debris, oils, paints, or any other materials, equipment, or vehicles shall be placed or deposited within the protection area nor shall any trenching or paving be done within the protection area.

No change in grade shall be permitted within the Tree Protection Zone except for a two (2) inch cut or two (2) inch fill of topsoil, sod, or mulch.

Underground utility lines shall be routed around and away from Tree Protection Zones. Necessary installation through protection zones shall be accomplished through tunneling rather than cutting open trenches, which sever tree roots.

Where machinery must pass within a Tree Protection Zone during construction, approval shall be required from the Building Official. To protect tree roots from excessive compaction during construction, special cushioning measures may be required by the Building Official such as a heavy layer of chip mulch, pine straw, or a "bridge" of boards.

Remedial site reclamation and tree care procedures, such as those mentioned above, may be required at the reasonable discretion of the Building Official when encroachment or construction activity within protective zones has caused damage to either a tree or tree growing site. Any such treatment shall be in accordance

with accepted International Society of Arboriculture practices. Such treatment shall occur prior to the issuance of a Certificate of Occupancy. At the discretion of the Development Review Board, the planting of additional trees may be required if trees are damaged or destroyed.

Those trees designated for preservation as shown on the approved Landscape Plan and/or development Site Plan, shall be marked on site with a bright blue ribbon encircling the trunk and a minimum four (4) foot high barricade shall be erected around each tree, or clusters of trees, at a distance no less than the extent of the required Tree Protection Zone from the base of the tree, or preferably at the drip line of the tree. No construction activity, other than finish grading, in accordance with the provisions of this Ordinance, or any storage of construction materials, or parking of vehicles during construction, is allowed within the barricaded area.

It is recognized that certain large tracts of land are master planned for residential development or Planned Unit Developments are developed in phases over many years. Large portions of these planned developments remain forested lands for many years and periodically require removal of certain trees in order to maintain a healthy forest and allow remaining trees to grow better.

For those residential lands of twenty (20) acres and larger, silviculture, or selective thinning, will be allowed subject to the following conditions:

An approved Preliminary Plan or Master Plan on file with the Beaufort County Zoning and Development Administrator;

An application for a Development Permit for selective harvesting must be filed and include a map or plat of the property indicating the area to be harvested, together with a Silviculture Plan prepared by a Registered Forester or Horticulturist. The Silviculture Plan must contain proposed methods for protection of hardwoods from damage during the timber operation; and

Only pine trees may be harvested, and only to the extent that there remains in the harvest area, the minimum site coverage standards of this Ordinance.

Clear cuts are strictly prohibited unless it is part of a silviculture activity. A permit is required to clear-cut parcels within the Town limits which must be obtained prior to cutting. No development is to take place on the clear-cut parcel within two (2) years of cutting. Property owners found in violation of this Ordinance are subject to penalties as described in the *Town of Bluffton Municipal Codes*.

For new golf course developments, and for additions to or renovations of, existing golf courses, the following tree surveying and replacement standards will apply:

Those areas in which golf course clubhouses, cart barns, snack bars, rest facilities, maintenance buildings, storage areas, and parking lots are to be located will adhere fully to all foregoing sections of this Ordinance;

Active playing areas (including proposed fairways, adjoining mowed grass rough, and new water hazards) and outdoor practice/training areas (including driving range, practice putting greens, etc.) will be exempt from the tree survey requirements of *Section 5.2.7.3*, and will instead require survey, including species, size, and location, of all hardwood trees with a trunk diameter of twenty-four (24) inches (dbh) or larger;

Such areas will also be exempt from the tree replacement requirements of this Section, except as such apply to all hardwood trees of twenty-four (24) inches (dbh) or greater located within these areas; and

All other portions of the golf course property shall have trees with a trunk diameter of twelve (12) inches (dbh) or greater surveyed. Any trees of this size, which are proposed to be removed, will be replaced pursuant to this Ordinance regardless of species.

No development shall directly contribute to pollution of the land, air, or water, constitute a nuisance, or pose a hazard to life or property. Conformance with all existing local, state, and federal statutes shall be

construed as conformance with this provision. Any junkyard, storage, work area, or other such area shall be screened with a fence or buffer approved by the Planning Commission.

Tree Protection Ordinance: Town of Sullivan’s Island
(Municipality with 600 to 2999 Residents)

Article X. Tree Protection Article

Sec. 21-77. Authority and Purpose.

This Tree Protection Article is adopted pursuant to the authority conferred by the South Carolina Code of Laws, Section 6-7-710, as amended 2 June 1988, for the purpose of preserving the natural landscape through the protection of trees and palmettos, maintaining and enhancing the tree mass, and mandating and encouraging the replanting of trees lost to development, destruction and natural causes. The standards and regulations are established in order to promote the public health and general welfare of the citizens of the Town, to preserve the natural history, beauty and value of the whole Island, to mitigate and prevent wind and water damage and erosion, to minimize flooding and to improve water quality and surface drainage, to improve air quality and lessen air pollution, to reduce noise, heat and solar glare, to protect wildlife, to sustain property values and ensure that quality of life and well being are maintained for all citizens of the Town through an undiminished natural landscape. (4-20-99)

Sec. 21-78. Definitions.

A tree is defined as any living, self-supporting woody perennial plant which is evergreen or deciduous. Determination of tree size shall be made by measuring the diameter of the tree at 4.5’ above grade (diameter at breast height – “DBH”). The minimum protection sizes for trees are as follows: a Category I tree, a “Significant” tree, has a DBH of at least 16 inches or a height of at least 40 feet and shall have the highest level of protection based on its total value to the island environment. A Category II tree. A “Protected” tree, has a DBH of at least 6 inches. All Sabal Palmetto (Cabbage Palm, herein called “Palmetto”) shall be given special protection as a “Protected Species” (11/21/00)

Sec. 21-79. Jurisdiction.

The Tree Ordinance shall apply to all public property and to all private property on Sullivan’s Island. (4-20-99; 11-21-00)

Sec. 21-80. Tree Removal.

No individual or agent shall remove, destroy, cause to be destroyed, move or mortally prune or use any other harmful treatment such as application of toxic substances, fire or machinery, on any tree or palmetto defined herein as “Significant” or “Protected” without the prior approval from either the Zoning Administrator or the Tree Commission, as applicable. The Tree Commission shall have jurisdiction over the removal and replacement of Protected Trees and Palmettos. The Zoning Administrator shall have jurisdiction over the proper handling, moving, relocation and permitted removal of all Sabal Palmettos. With prior approval and supervision of the Zoning Administrator, healthy palmettos may be moved intact either to another site on the same lot or to a site on public property of the Town at the responsibility and expense of the property owner using best professional management practices. (12-21-00)

Sec. 21-81. Tree Commission.

The Town Council shall appoint a Tree Commission, comprised of five (5) members, all residents of Sullivan’s Island who have demonstrated a knowledge of the diversity of issues concerning trees and an interest in the preservation of the total environment of Sullivan’s Island. Three (3) members shall be appointed for three (3) year terms and two (2) members shall be appointed for two (2) year terms. Successors shall be appointed for full three year terms. Any member may be removed for cause by Town Council. Replacements for unexpired terms shall serve the balance of the unexpired term and are eligible for reappointment to full terms. The Commission shall elect a chairman and vice-chairman for one (1) year

terms. Officers may succeed themselves, if reelected. The commission shall adopt flutes for the conduct of its business subject to the review of the Town Attorney. Meetings shall be conducted at such times as agreed by the Commission, at least once a month, unless there is no pending business, or upon the call of the Chairman. Three (3) members are required for a quorum and a concurring vote of three (3) members is required to approve an application for tree removal and replacement. All commission meetings shall be public and proceedings shall be reflected in minutes, kept on file as a public record in the offices of Town Hall.

Sec. 21-82. Duties and Powers.

The Tree Commission shall have the authority to approve the removal and replacement of all significant trees, as defined herein, having gathered all the facts and circumstances pertaining to the request, including site visits with the applicant when deemed necessary by the Commission. Before a final determination is made on the application, a tree replacement plan must be agreed upon and approved by the commission. An Application may be approved or approved with conditions and issued, or it may be denied. As needed, consultation may be provided by the Urban Foresters of the South Carolina Forestry Commission.

The Tree Commission shall adopt a set of guidelines for the implementation of this Article, including an approved list of appropriate replacement trees.

In addition, the Tree Commission may conduct a survey of island trees and palmettos, establish and maintain a record of "Significant" trees, promote educational programs for tree and palmetto conservation, serve as a source of information on trees and palmettos for citizens of the island, and may, with the approval of Town Council, seek public funds and grants to support these activities as well as for tree and palmetto planting and preservation projects. It may organize appropriate community activities, such as for Arbor Day, and may lead public efforts to encourage voluntary tree planting and tree and palmetto conservation. The Tree Commission shall also develop, with the approval of Town Council, plans for tree and palmetto planting on public property. (4-20-99)

Sec. 21-83. Plan Submittal.

Application for tree removal or palmetto removal or relocation for undeveloped property will not be accepted without a pending building permit application and construction plans on file with building permit application and construction plans on file [sic] with the Town of Sullivan's Island. An approved tree or palmetto removal plan shall become a part of the building permit, with a building permit not issued until such plan is approved. An application for tree or palmetto removal or palmetto relocation on undeveloped property, or for an addition or improvement to developed property, must be accompanied by two (2) copies of a site survey, drawn to scale, indicating all existing trees and palmettos and existing buildings and structures, if any, and proposed buildings or structures, if any, and proposed buildings or structures. This survey may be incorporated into the site plan submitted with construction plans for a building permit application. Application for the removal of significant trees or palmettos shall also be accompanied by photographs of the site.

Upon approval, the plans shall be signed and dated by either the Zoning Administrator or the Chairman of the Tree Commission, as applicable. One set of plans will be returned to the applicant, with the Town retaining a set for its files.

A fine of \$25.00 will be charged for tree removal, palmetto relocation and replacement plan review. Prior approval will be required but no fees will be charged to remove dead or diseased trees and palmettos still standing or trees still standing but damaged beyond recovery by acts of nature. Emergency removal of trees or palmettos that for any reason pose an imminent dander to life or property may be removed without prior notification or approval; these occurrences must be reported within five days; trees or palmettos that have already fallen on their own due to disease or damage from natural disaster may be cleared away without approval; occurrence of loss from natural disaster causes must be reported within five days and the requirements for replanting new trees or palmettos in their place may be waived.

Questions concerning the appropriateness of tree removal under the condition indicated in the above paragraph shall be decided by the Tree Commission.

Sec. 21-84. Tree Replacement.

Tree replacement shall be required for all approved tree removals based on the requirement of replacing on linear inch of tree DBH for each linear inch of tree DBH removed, with trees from the approved tree list, except that replacement for the removal of oaks, magnolias, pecan and cedar trees shall be with the same kind of tree, as determined by the Zoning Administrator or Tree Commission, as applicable. Each replacement tree must have a minimum of two (2) inches caliper and be at least ten (10) feet tall. An approved tree replacement plan shall be an integral part of all tree removal permits. In cases where tree replacement on the same lot is not possible or desirable, the lot owner shall donate to the Tree Fund of Sullivan's Island a tree or trees of equivalent mass and quality as herein provided, to be planted on public property of the Town; or if that is not feasible at this time, the lot owner may donate to the Tree Fund an equivalent sum of money for the future purchase of public trees as described herein. Furthermore, it shall be required that tree replacement be accomplished within a time limit according to the earliest time possible for replacement as set by the Zoning Administrator or the Tree Commission. Any permitted removal of Sabal Palmettos will require replacement by a Sabal Palmetto at least 8 feet tall. (9-18-01)

The Tree Commission shall determine the replacement of significant trees as provided herein.

The location of replacements for protected trees or palmettos on private property shall be at the discretion of the lot owner, with approval from the Zoning Administrator.

All replacement trees must be of healthy, vibrant stock, in accordance with American Standards for Nursery Stock of the American Association of Nurserymen. The lot owner is responsible for maintenance and replacement of trees and palmettos and for replacement of these trees if they die within one year of planting. (11-21-00)

Sec 21-85. Tree Fund.

The money collected from these permits, as well as from fines for violations of the ordinance, will be placed in a special fund, "The Tree Fund", to be used solely for the purchase of trees to be planted on public property of Sullivan's Island and for other related activities planned by the Tree Commission and approved by Town Council.

Sec. 21-86. Exception.

a. Nothing in the application of the requirements of this Section shall restrict the ability of public utilities and electric suppliers from maintaining safe clearance around utility lines, employing best management practices, with tree removal when unavoidable, consistent with plans submitted periodically, but not less than annually, to the Tree Commission.

b. During a period of Town emergency, such as hurricane, tornado, ice storm, flood or any other such act of nature, the provisions of this act are suspended, with the exception of the prohibition of the removal of healthy, non-threatening trees or palmettos.

c. If the failure to remove a tree would constitute an imminent danger to public health, safety welfare [sic] to the environment or to property due to the hazardous or dangerous condition of such tree, the provision [sic] of this act are suspended. Such removal shall be reported to the Tree Commission within five (5) days, with the provisions of this Section for replanting considered in due time.

Sec. 21-87. Violations and penalties.

Violations shall include disregard for the Section of the Zoning Ordinance or any part thereof, such as destruction of a tree or palmetto or critical damage to a tree or palmetto by any means such as those described herein, or disregard of any conditions of a permit, such as failure to protect trees or palmettos during construction activities or to replant trees or palmettos in accordance with the permit. Each unauthorized removal, destruction, negligent act or failure to replant a tree or palmetto shall constitute a separate offense subject to fines and penalties. Nothing herein shall prevent the Town from taking such other lawful action as is necessary to prevent or remedy any violations. Replacement as described herein shall also be required. Any person convicted of violating any provision of this Section shall be fined not more than \$500.00 or sentenced to incarceration for period not to exceed thirty (30) days, or both. (4-20-99)

Sec. 21-88. Appeals.

Appeals from the decision of the Zoning Administrator or the Tree Commission by any aggrieved party shall be considered by the Zoning Board of Zoning Appeals [sic] as proscribed in the Zoning Code. (4-20-99)

Sec. 21-89. Severability.

Should any portion of this Article be found illegal by a court of competent jurisdiction, the remainder of the Article shall remain in effect. (9-17-91, 12-17-91; 4-20-99)

County Tree Protection Ordinance: Georgetown County

ARTICLE XI
TREE REGULATIONS

1100. **INTENT.** It is the intent of this section to encourage the protection and replacement of trees during and after development within certain zoning classifications. Benefits derived from tree protection and replacement include: improved control of soil erosion, moderation of storm water runoff, and minimization of the cost of construction and maintenance of drainage systems; improved water quality; interception of airborne particulate matter and the reduction of air pollutants; reduction of noise, heat and glare; enhancement of habitat for desirable wildlife; climate moderation; maintenance of aesthetic qualities provided by the natural environment and its scenic viewsheds; provision of protective physical and psychological barriers between pedestrians and vehicular traffic; energy and water conservation; and the enhancement of real estate property values.

1101. **REGULATIONS WITHIN CERTAIN ZONING DISTRICTS.** The regulations contained in this Article are divided into two classifications: tree protection regulations and tree replacement regulations. Tree protection regulations shall apply to all zoned property in unincorporated Georgetown County. Tree replacement regulations shall apply to specific types of development in the following districts:

<u>Zoning Districts</u>	<u>Land Uses Affected by Tree Replacement Regulations</u>
FA, NC, GC	Commercial, public buildings, schools and churches
GR, GRR, RC, CC, VC	Multi-family, commercial, public buildings, schools and churches
MD, OC	Commercial, public buildings, medical, and churches
RS, MHP, DP	All development
PD	As required by Staff

1102. **TREE PROTECTION REGULATIONS.** Within the area established as the minimum required setback area, as defined by Article VII of this Ordinance and illustrated in Appendix A; Figure 1, neither Significant nor Landmark trees (See Appendix A; Criteria for Significant and Landmark Trees) shall be removed, cut above ground or otherwise disturbed without a tree removal permit. Furthermore, within the area of the entire development site, no tree designated as a Landmark tree shall be removed, cut or otherwise disturbed unless the Zoning Administrator determines that the tree is hazardous, in decline, diseased, infectious; the removal of the tree is necessary to maintain the appearance, health or vigor of the remaining trees or no practical alternatives for reasonable use of the property exist. If a determination is made that certain healthy, Significant or Landmark trees may be removed, they shall be replaced in accordance with the requirements of Section 1103 of this Article.

1102.1 **Tree removal permits:** Tree removal permits shall be required for all zoned properties. The Zoning Administrator shall conduct a preliminary review of the site within two weeks and issue a determination in writing upon receipt of the application. An appeal of the Zoning Administrator’s decision may be filed in accordance with the procedures cited in Article XIII of this Zoning Ordinance.

1102.2 Tree protection areas: Significant trees or stands of trees designated to be saved shall be protected from the following damages, which may occur during all phases of land disturbance and construction processes:

direct physical root damage;

indirect root damage; and

trunk and crown disturbances.

1102.3 Planning considerations. Tree space is the most critical factor in tree protection throughout the development process. The root system of trees can easily extend beyond the dripline of the tree canopy (Appendix A; Figure 3). The root system within the dripline region is generally considered to be the critical root zone. Disturbance within this zone can directly affect a tree's chances for survival. To protect these critical root zones the following standards shall apply:

Tree save islands and stands shall be used rather than the protection of small individual (non-significant) trees scattered throughout a site;

The area of trees to be protected shall include no less than the total area beneath the tree(s) canopy as defined by the farthest canopy dripline of the tree(s);

Layout of the project site utility and grading plans shall accommodate the required tree protection areas. Utilities should be placed along corridors between tree protection areas, whenever possible; and

Construction site activities such as parking, material storage, concrete washout, burnhole placement, etc., shall be arranged so as to prevent disturbances within tree protection areas.

Protective Barriers. Prior to any land disturbance, suitable protective barriers shall be erected and maintained around all trees to be retained during development, so as to prevent damage. The Zoning Administrator shall be consulted regarding the specific type(s) of barrier(s) to be utilized and shall periodically visit the site during the construction stage to ensure compliance with all provisions of this Ordinance.

Active protective tree fencing shall be installed along the outer edge of and completely surrounding the critical root zones of all trees to be protected, prior to any land disturbance. (See Appendix A; Figures 4 and 5.)

These fences shall be a minimum of 4 feet high, constructed in a post and rail configuration. A 2-inch x 4-inch post and a double 1-inch x 4-inch rail is recommended. Four-foot orange polyethylene laminar safety fencing is also acceptable (See Appendix A; See Figure 4).

Passive forms of tree protection may be utilized in any area not subject to land disturbance. (See Appendix A; Figure 6.)

These areas shall be completely surrounded with continuous rope or flagging (heavy mill, minimum 4" wide).

1102.4.3 There shall be no grading or paving with any impervious material within five (5) feet of any trees retained (additional area may be specified by the Zoning Administrator if necessary to prevent injury to Significant and Landmark trees).

All trees to be protected shall be protected from the sedimentation of erosion material.

Silt screening shall be placed along the outer uphill edge of tree protective zones at the land disturbance interface.

Silt screening shall be backed by 12-gauge 2 inch x 4-inch wire mesh fencing in areas of steep slope.

All tree fencing and erosion control barriers shall be installed prior to and maintained throughout the land disturbance process and building construction, and shall not be removed until landscaping is installed.

1102.5 Encroachment. Most trees can tolerate only a small percentage of critical root zone loss. If encroachment is anticipated within the critical root zones of trees to be protected, the following preventive measures shall be employed, as required by the Zoning Administrator:

Clearing activities: The removal of trees adjacent to tree protection areas can cause inadvertent damage to the roots of protected trees. Whenever possible, a minimum two (2') foot trench (e.g. with a "ditchwitch") shall be cut along the limits of land disturbance, rather than tear the roots.

Soil compaction: Where compaction might occur due to traffic or materials storage, the tree protection area shall first be mulched with a minimum 4 inch layer of processed pine bark or wood chips, or a 6 inch layer of pine straw.

Utility installation: The installation of utilities through a tree protection area shall occur by way of tunneling rather than trenching. (See Appendix A; Figures 7 and 8.) If roots must be cut, proper root pruning procedures shall be employed as stated in Section 1102.6.1.

Grade Changes: An increase in grade may be tolerated within a tree's critical root zone. This shall be accompanied with the installation of an aeration system as illustrated in Appendix A; Figures 9 and 10. A decrease in grade shall be accomplished with the use of retaining walls or through terracing as illustrated in Appendix A; Figure 11.

Irreparable damage: Where the Zoning Administrator has determined that irreparable damage has occurred to trees within a tree protection area, removal or replacement of the trees may be required.

1102.6 Remedial procedures. The survival rate of trees damaged through construction activities can be improved with the implementation of remedial procedures. If encroachment is anticipated, the following preemptive measures to improve survival shall be applied where appropriate:

1102.6.1 Pruning. The pruning of a tree in anticipation of construction damage may provide compensation for potential root loss and promote recovery. Trees, which have not been affected by construction activities, can be pruned for maintenance of the tree's health, appearance, and safety. Pruning specifications as provided by the National Arborist Association (N.A.A.) in "Pruning Standards for Shade Trees" shall apply.

Fertilization. Fertilizer applications will enhance the vigor of trees stressed by site disturbances, thereby promoting root development. A complete fertilizer containing nitrogen, phosphorus and potassium is most commonly recommended. The following methods of fertilizer applications may be utilized.

High-pressure soil injection of fertilizer solution: the nutrient solution is injected into the soil at the prescribed rate and frequency. Benefits of this method include its effectiveness in even distribution, improved soil aeration, and immediate availability of nutrients in the soil.

Surface applications of granular fertilizer: with this method, fertilizer is broadcast over the surface of the target area at the prescribed rate and frequency. The benefit of this method is the ease in application. A major disadvantage is the loss of fertilizer from runoff, particularly in areas with steep slope.

Soil incorporation of granular fertilizers: with this method of application, granular fertilizer is placed at the prescribed rate and frequency in holes drilled within the target area. Benefits of this method include increased soil aeration, with a reduced loss of fertilizer from runoff.

Fertilizer applications can be injected directly into the vascular system (the system which conducts and transports water and nutrients) of trees. These trunk microinjection products may be used on trees with root – spatial limitations, or for trees that have suffered substantial root damage from construction activities.

Reclamation of growing site. A tree’s ability for adequate root development, and ultimately its chances for survival, is improved with reclamation of the growing site. Benefits of site reclamation include conservation of soil moisture, reduced rainfall runoff and erosion, reduced soil compaction from construction activities, reduced competition from grasses and weeds, increased soil fertility, improved soil structure and moderation of soil temperature, with a subsequent increase in root development activity. The following methods of site reclamation may be utilized:

Bringing the soil back to its natural grade by removal of any unnecessary fill, erosion sedimentation, concrete washout, and construction debris.

The aeration of compacted soils within the critical root zones of trees.

Improvement of soil with mineral supplementation.

The spreading of mulch material, such as pine bark or wood chips spread a minimum of four (4”) inches deep, within the critical root zones of trees.

Monitoring of the availability and drainage of water. Appendix A; Table 1 provides general information useful in determining soil moisture for soils typical of the area.

1103. **TREE REPLACEMENT REGULATIONS.** Prior to the issuance of a building or development permit, the applicant shall submit a tree plan showing the location, size and species of all Significant and Landmark trees. The plan shall indicate the retention of at least fifteen (15) square feet of tree basal area per acre, excluding pre-existing open water features and storm water retention/detention areas in the calculation. (See Appendix A; Procedures for Calculating Minimum Tree Requirements.) This plan shall take into consideration the general landscape characteristics of the site, defined by the density of plant material in the immediate and surrounding areas, and any distinctive grouping of trees or other landscaping features. It shall contain a strategy for retaining those characteristics.

If the applicant cannot retain or if there are less than fifteen (15) square feet of basal area per acre on the site, he shall re-establish at least three (3) replacement trees of two inch (2”) Diameter Breast Height (DBH) or larger per each square foot of basal area necessary. For sites located within Planned Developments, the plan shall be reviewed and approved in accordance with section 619.2 of this Ordinance. If the site is less than an acre in size, the fractional requirement (rounded up to the nearest whole number) shall prevail.

The applicant, while planting trees, shall consider the following:

1103.1.1 The spacing of replacement trees shall take into consideration the eventual size at maturity of selected species;

1103.1.2 Species selected for replacement shall be quality specimens, in accordance with the standards for selection of quality replacement stock and for transplanting;

Significant trees and stands of trees shall be replaced by species with potential for comparable size and growth; and

1103.1.4 Species selection and placement shall be subject to the approval of the Zoning Administrator.

1103.2 The following standards for selecting quality replacement stock shall be used:

Trees selected for planting shall meet the minimum requirements as provided in the “American Standard for Nursery Stock”, (ANSI z60.1, 1980). Appendix A; Tables 2 through 6 provide a quick reference to some of the more frequently used ANSI standards;

Trees selected for planting shall be free from injury, pests, disease, or nutritional disorders; and

Trees selected for planting shall be of good vigor. The following criteria shall be used for the determination of vigor:

Foliage. Should have a green or dark green color, large leaves and dense foliage.

Shoot growth. At least ½ of the branches shall arise from points on the lower 2/3 of a trunk.

Bark texture. Smooth or shiny bark on the trunk and branches.

Trunk taper. Will generally have an increase in diameter with a decrease in height. Trees with reverse tapers or no taper shall be avoided.

Root color. Young roots of most trees will be light in color.

Trees selected for planting shall be free of root defects.

1103.3 The following standards shall be used for transplanting trees:

The transplanting of new trees can result in major injury to their root system. If proper transplanting techniques are employed, conditions will be more favorable for tree recovery, and the rate of attrition for newly planted trees will be reduced.

Transplanting procedures shall follow standards established by the International Society of Arboricultural in the “Trees and Shrub Transplanting Manual.”

Planting procedures (See Appendix A; Figure 12.)

Planting holes shall be no less than 1 foot wider than the root ball or bare roots of the tree being planted. A planting hole 2 times the width of the root system is recommended;

Trees shall not be planted deeper than they were in their former location or container;

Spade compacted bottom and sides of the planting hole shall be roughed or scarified to allow the penetration of developing roots;

Good water drainage from the bottom of the planting hole is essential for root regeneration;

Once the transplanted tree is set, the hole shall be backfilled with soil of good texture and structure;

The backfill shall be gently tamped (but not compacted), and soaked for settling; and

The soil shall be slightly mounded to allow for settling; a ridge or dike around the perimeter of the hole can facilitate watering.

Post-planting procedures.

Pruning is recommended during the first growing season if the tree is showing “transplant shock” or drought symptoms (wilting), or for the removal of weak, broken, or diseased branches. Standard pruning practices shall be followed.

Staking shall be used on newly planted trees only where determined necessary. Periodic follow-up inspections are required to prevent serious tree-staking problems. Staking shall be removed as soon as the tree is capable of providing its own anchorage and support. Recommended types and uses of staking are as follows:

Protective staking is used to provide a barrier from foot traffic, movers, vehicles, etc., for trees able to stand without support. (See Appendix A; Figure 13.)

Anchor staking is used to hold a root ball in place during the period of reestablishment, for trees with otherwise adequate support. (See Appendix A; Figure 14.)

Support staking is used for trees with weak trunks or oversized crowns, unable to stand without support or in wind. (See Appendix A; Figure 14)

Guying is recommended where necessary for large transplanted trees (4" DBH or greater) to provide both anchorage and support. (See Appendix A; Figure 15)

Newly planted trees shall be mulched with a minimum 4 inch layer of processed pine bark or wood chips, or a 6 inch layer of pine straw to reduce competition from weeds, and moderate soil moisture and temperature extremes.

Fertilizer application shall begin after the tree's first full growing season.

Water availability for the newly planted tree shall be monitored, and adjusted according to the species water requirements and the site conditions.

1103.4 Following development, the property owner shall be responsible for maintaining the trees that were saved and/or planted. (See Section 1102.6 for additional information on remedial tree care.) If any of the trees become diseased or damaged, the property owner shall be responsible for replacing the trees immediately after their removal.

As the trees within a development grow and mature, the Zoning Administrator may authorize removal of certain trees, which lack vigor or are diseased, in order to maintain the appearance and health of the remaining trees. If site conditions are conducive to replacing the removed trees, the Zoning Administrator may require tree replacement.

1104. **MITIGATION POLICY.** Any tree removed without permit authorization must be replaced with three (3) trees, each of two (2") inch DBH, and of a species categorized as Significant. If the Zoning Administrator determines that an act of clear-cutting has occurred on site prior to issuance of a development permit, the property owner shall be required to replace the trees with Significant tree species, at a rate of one (1) tree of two (2") inch DBH tree per five hundred (500) square feet of open space, excluding the approved building area, any pre-existing open water features and storm water retention/detention areas.

If any property is sold, subsequent to the act of clear-cutting by the previous owner, the new owner shall assume responsibility for mitigation and it will be his responsibility, if he so chooses, to seek redress and recover costs from the previous owner under whom the act occurred.

1105. **APPLICATION FOR A BUILDING OR DEVELOPMENT PERMIT.** When an application for a building permit or development permit is submitted to the County, a tree plan for the development or alteration of any non-exempt parcel of land shall be submitted to the Zoning Administrator. No building or development permit shall be issued until the tree plan has been reviewed and approved by the Zoning Administrator, who shall approve, approve conditionally or disapprove the plan. If the plan is disapproved or approved conditionally, the reasons for such action shall be stated in writing and signed by the Zoning Administrator. The Zoning Division shall retain a copy of the justification for these actions, and a copy

shall be given to the applicant. On conditional approval, the Zoning Administrator may require the applicant to re-submit the plan with all recommended changes before granting final approval.

1105.1 Tree Plan Requirements. A tree plan shall include the following elements:

1105.1.1 location, DBH and species of all Significant and Landmark trees on site;

1105.1.2 designation of tree protection areas with identification of trees to be retained, and areas of tree replacement; notation of specifications for protection of trees to be retained during development; methods of tree protection for all tree protection areas, including tree fencing, erosion control, retaining walls, tunneling for utilities, aeration systems, transplanting and staking;

1105.1.3 indication of any Significant or Landmark trees to be removed;

1105.1.4 a tree replacement schedule showing the location, species and size of any replacement trees to be planted and existing trees or stands of trees used in the calculation;

1105.1.5 limits of clearing and land disturbance such as grading, trenching, etc., staging areas for parking, material storage, concrete washout, debris burn and burial holes;

1105.1.6 proposed location of all underground utilities should be indicated; if an irrigation system is utilized, the location of the lines and heads;

1105.1.7 specifications and provisions for maintenance and upkeep of trees upon completion of the project;

1105.1.8 the name, address and telephone number of the applicant and the following notes in large letters:

CONTACT THE ZONING DIVISION AT (843) 546-4011 TO ARRANGE A PRE-CONSTRUCTION CONFERENCE WITH THE ZONING ADMINISTRATOR. PRIOR TO ANY LAND DISTURBANCE. ALL TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.

1106. **EXCEPTIONS TO THESE REGULATIONS.** The following are exceptions:

If any tree is determined by the Zoning Administrator to be diseased, injured or located in a manner that endangers the public health, safety or welfare, the Zoning Administrator may authorize immediate removal.

Immediately after the event of a natural disaster such as a tornado, hurricane, storm, or flood, which results in catastrophic loss or damage to trees, lost or damaged trees may be removed without a permit. One tree of at least two (2") inch DBH shall be replanted, within a one year period, for each tree removed. Only the Zoning Administrator shall determine catastrophic loss or damage.

The operation of ongoing, managed timber production industries, and the ability of public utilities and electric suppliers to maintain safe clearances around utility lines shall be exempt from this Ordinance.

The development and maintenance of golf courses, road rights-of-way, easements for utilities and drainage, wells, lift stations and water storage tanks shall be exempt from this Ordinance.

APPENDIX B: TREE CITY STANDARDS

(Below from: www.arboday.org/programs/TreeCityStandards.html)

The Four Standards of a Tree City USA

1. A Tree Board or Department
2. A Tree Care Ordinance
3. A Community Forestry Program With an Annual Budget of at Least \$2 Per Capita
4. An Arbor Day Observance and Proclamation

To qualify for Tree City USA, a town or city must meet four standards established by The National Arbor Day Foundation and the National Association of State Foresters.

These standards were established to ensure that every qualifying community would have a viable tree management plan and program.

It is important to note that they were also designed so that no community would be excluded because of size.

1. Tree Board or Department

Someone must be legally responsible for the care and management of the community's trees. This may be a professional forester or arborist, an entire forestry department, or a volunteer tree board. Often, both a professional staff and advisory tree board are present, which is a good goal for most communities. A tree board, or commission, is a group of concerned volunteer citizens charged by ordinance with developing and administering a comprehensive tree management program. Balanced, broad-based community involvement is encouraged. Boards function best if not composed entirely of tree-related professionals such as forestry professors, nursery operators, arborists, etc. Fresh ideas and different perspectives are added by citizens with an interest in trees that is entirely avocational. Limited, staggered terms of service will prevent stagnation or burnout, while at the same time assuring continuity.

2. Tree Care Ordinance

The tree ordinance must designate the establishment of a tree board or forestry department and give this body the responsibility for writing and implementing an annual community forestry work plan. Beyond that, the ordinance should be flexible enough to fit the needs and circumstances of the particular community. A tree ordinance provides an opportunity to set good policy and back it with the force of law when necessary. Ideally, it will provide clear guidance for planting, maintaining and removing trees from streets, parks and other public places. For tips and a checklist of important items to consider in writing or improving a tree ordinance, see Bulletin Number 9.

3. A Community Forestry Program With An Annual Budget Of At Least \$2 Per Capita

Evidence is required that the community has established a community forestry program that is supported by an annual budget of at least \$2 per capita. At first, this may seem like an impossible barrier to some communities. However, a little investigation usually reveals that more than this

amount is already being spent by the municipality on its trees. If not, this may signal serious neglect that will cost far more in the long run. In such a case, working toward Tree City USA recognition can be used to re-examine the community's budget priorities and re-direct funds to properly care for its tree resource before it is too late. Ideally, this standard will be met by focusing funding on an annual work plan developed after an inventory is completed and a report is approved by the city council. Such a plan will address species diversity, planting needs, hazardous trees, insect and disease problems and a pattern of regular care such as pruning and watering.

4. An Arbor Day Observance and Proclamation

This is the least challenging and probably the most enjoyable standard to accomplish. An Arbor Day celebration can be simple and brief or an all-day or all-week observation. It can be a simple tree planting event or an award ceremony that honors leading tree planters. For children, Arbor Day may be their only exposure to the green world or a springboard to discussions about the complex issue of environmental quality. The benefits of Arbor Day go far beyond the shade and beauty of new trees for the next generation. Arbor Day is a golden opportunity for publicity and to educate homeowners about proper tree care. Utility companies can join in to promote planting small trees beneath power lines or being careful when digging. Smokey Bear's fire prevention messages can be worked into the event, as can conservation education about soil erosion or the need to protect wildlife habitat. Still another way to develop Arbor Day is to link it with a tree-related festival. Some that are currently celebrated include dogwood festivals, locust blossom festivals and Macon, Georgia's Cherry Blossom Festival that annually brings more than \$4.25 million into the local economy. In meeting the four standards, help is available! The urban and community forestry coordinator in your state forester's office will be happy to work with communities in taking these first steps toward better community forestry.

APPENDIX C: RESOURCES

Guidelines for Writing Ordinances

Duerksen, C.J. & Richman, S. (1993). *Tree Conservation Ordinances*. Chicago: American Planning Association.

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<www.isa-arbor.com/tree-ord/>

Iowa State University Department of Forestry. *City Tree Ordinances*. Available at:

<www.ag.iastate.edu/departments/forestry/ext/treord.html>

South Carolina Forestry Association. *Local Tree Ordinance Recommendations for Rural Areas*. Available at:

< www.scforestry.org/issues/local.html>

Southern Illinois University Carbondale Department of Forestry & Illinois Department of Natural Resources Division of Forestry. *Forestry Principles for Small Communities in Illinois*. Available at:

<www.siu.edu/~forestry/urbanfor/manual.PDF>

TREEORD Software for Tree Ordinance Development. Available at:

<www.treetrust.org/whatsnew/whatsnew.html>

Urban & Community Forestry Program of the Georgia Forestry Commission. *Tree Ordinance Development Guidebook*. Available at:

<www.gfc.state.ga.us/Publications/UrbanCommunityForestry/TreeOrdinanceDevelopmentGuidebook.pdf>

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Weber, C.C. (1989). Developing a Successful Urban Tree Ordinance. In G. Moll & S. Ebenreck (eds.), *Shading Our Cities* (pp. 142-147), Washington, D.C.: Island Press.

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Duerksen, C.J. & Richman, S. (1993). *Tree Conservation Ordinances*. Chicago: American Planning Association.

Moll, G. & Ebenreck, S. (eds.). (1989). *Shading Our Cities*. Washington, D.C.: Island Press.

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Plotnik, A. (2000). *The Urban Tree Book: An Uncommon Guide for City and Town*. New York: Three Rivers Press.

Bibliographies on the Internet

Urban Forestry Bibliography (www.msue.msu.edu/msue/imp/modb1/masterb1.html)

Tree Ordinance-Resource List: Publications, Web Sites, Research, Conferences and Contacts, January 2002 (www.urbanforestrysouth.org/ordinances/ordinances.doc)

Literature Review, Thesis, Neal Wesley Kessler
(<http://etd01.lnx390.lsu.edu:8085/docs/available/etd-0122102-171421/unrestricted/Chapter2.PDF>)

Websites

American Forests (www.americanforests.org/)

American Planning Association (www.planning.org)

International Society of Arboriculture (www.isa-arbor.com/)

National Arbor Day Foundation (www.arboday.org)

South Carolina Forestry Association (www.scforestry.org/issues/local.html)

South Carolina Forestry Commission (www.state.sc.us/forest/)

Southern Illinois University Carbondale Department of Forestry & Illinois Department of Natural Resources Division of Forestry (www.siu.edu/~forestry/urbanfor/manual.PDF)

Tree City USA (www.arboday.org/programs/TreeCityBenefits.html)

Urban Forestry South (www.urbanforestrysouth.org)

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South Carolina's Councils of Governments

<p>Appalachian Council of Governments (Anderson, Cherokee, Oconee, Pickens, and Spartanburg Counties) P.O. Drawer 6688 Greenville, South Carolina 29606 Telephone: (864) 242-9733 Fax: (864) 242-6957 www.scacog.org/ Robert B. Strother, Executive Director</p>	<p>Lowcounty Council of Governments (Beaufort, Colleton, Hampton, and Jasper Counties) P.O. Box 98 Yemassee, South Carolina 29945 Telephone: (843) 726-5536 Fax: (843) 726-5165 Chris Bickley, Executive Director</p>
<p>Berkeley-Charleston-Dorchester Council of Governments (Berkeley, Charleston, and Dorchester Counties) 5290 Rivers Avenue, Suite 400 North Charleston, South Carolina 29406 Telephone: (843) 529-0400 Fax: (843) 529-0305 www.bcdkog.com/ Ron Mitchum, Executive Director</p>	<p>Pee Dee Regional Council of Government (Chesterfield, Darlington, Dillon, Florence, Marion, and Marlboro Counties) P.O. Box 5719 Florence, South Carolina 29503 Telephone: (843) 669-3138 Fax: (843) 669-0511 Johnny B. Brown, Executive Director</p>
<p>Catawba Regional Planning Council (Chester, Lancaster, Union, and York Counties) 215 Hampton Street Post Office Box 450 Rock Hill, South Carolina 29731 Telephone: (803) 327-9041 Fax: (803) 327-1912 www.state.sc.us/cogs/catawba/ Harold Shapiro, Executive Director CRPC@InfoAve.Net</p>	<p>Santee Lynches Regional Council of Governments (Clarendon, Kershaw, Lee, and Sumter Counties) P.O. Box 1837 Sumter, South Carolina 29151 Telephone: (803) 775-7381 Fax: (803) 773-9903 www.slkog.state.sc.us/ James Darby, Executive Director</p>
<p>Central Midlands Council of Governments (Fairfield, Lexington, Newberry, and Richland Counties) 236 Stoneridge Drive Columbia, South Carolina 29210 Telephone: (803) 376-5390 Fax: (803) 376-5394 http://centralmidlands.org/ Nevetta Blocker, Interim Executive Director</p>	<p>Upper Savannah Council of Governments (Abbeville, Edgefield, Greenwood, Laurens, McCormick, and Saluda Counties) 222 Phoenix Street, Suite 200 P.O. Box 1366 Greenwood, South Carolina 29648 Telephone: (864) 941-8050 Fax: (864) 941-8090 www.uppersavannah.com/ Patricia Edmonds, Executive Director</p>
<p>Lower Savannah Council of Governments (Aiken, Allendale, Bamberg, Barnwell, Calhoun, and Orangeburg Counties) P.O. Box 850 Aiken, South Carolina 29802 Phone: (803) 649-7981 Fax : (803) 649-2248 www.lscog.org/ Eric P. Thompson, Executive Director</p>	<p>Waccamaw Regional Planning and Development Council (Horry, Georgetown, and Williamsburg Counties) 1230 Highmarket Street Georgetown, South Carolina 29440 Telephone: (843) 546-8502 Fax: (843) 527-2302 G. Kenneth Thompson, Executive Director</p>

APPENDIX D: TIMBER SPECIFICATIONS & EXEMPTIONS

A note on the formatting of the ordinances: Many styles are used in ordinance codification. In order to maintain the ordinance's intent, where possible, the individual jurisdiction's ordinance formatting is displayed.

Beaufort County

Sec. 106-1157. Forestry.

(a) *Limited/special standards in all applicable districts, except for rural and rural residential.* Limited/special standards for forestry use in all applicable districts, except for rural and rural residential, are as follows:

- (1) A forestry plan shall be submitted that demonstrates that the intended forestry activities will not adversely affect flood hazard, river buffer and specimen tree protection requirements of article VII of this chapter. In determining this, the ZDA shall review the type of cutting and site plan for the activity.
- (2) Bufferyards of 50 feet along adjoining streets and districts shall be retained. Where no existing bufferyard is present in the required 50-foot area, the location of the bufferyard may require being placed further inward of the property line. Excessive cutting of the bufferyard shall result in the area having to be replanted as per section 106-1680.
- (3) All state standards for BMPs, buffers and reforestation practices shall be adhered to.
- (4) The landowner shall retain a minimum of at least 25 overstory trees per acre after final harvest, not including the required buffer. The landowner shall immediately pursue planned natural regeneration methods, whereby between four to 12 seed harvesting trees are left uncut, or 20 to 30 shelterwood harvesting trees are left uncut. Either method is acceptable as long as the required buffer is provided and the method recognized by the state for responsible forestry practices.

(b) *Resource conservation district.* In the resource conservation district forestry shall be permitted only when part of a BMPs plan to retain the highest quality natural area through limited harvesting of trees to improve the quality and growth of the rest or to eliminate invasive species.

(c) *Rural/rural residential districts.* In rural/rural residential districts, timber harvesting, as defined by the S.C. Forestry Association, shall only require that notice be provided to the ZDA of intended activity prior to commencement of the activity.

(Ord. No. 99-12, § 1 (03.211), 4-26-1999)

Sec. 106-1158. Clearcutting.

The limited/special standards for clearcutting in all applicable districts are as follows: Clearcutting is generally not permitted in any district other than for bona fide forestry practices. When clearcutting does not include forestry, approval for clearcutting shall be issued only under one of the following conditions:

- (1) A 50-foot forested buffer shall remain along all street frontages. Absence of the required existing buffer shall preclude any site from being approved for this use.
- (2) As part of a site plan or subdivision with an approved resource protection plan.
- (3) When a site capacity analysis is submitted along with an environmental impact assessment demonstrating that this chapter's standards are met, and a record of the property's original conditions is filed with the planning department.

If an owner clear cuts all or any portion of his or her property under the claim of good faith forestry practice, and then seeks a development permit for any portion of the property within one year of the clear cut, a rebuttable presumption shall arise that the clear cut was done in anticipation of future development and the permit denied. Any person seeking to rebut the presumptions shall have the burden of proving their claim by clear and convincing evidence.

(Ord. No. 99-12, § 1 (03.212), 4-26-1999; Ord. No. 2001-27, 10-8-01)

Sec. 106-1907. Forestry.

- (a) Clearcutting is prohibited in designated open spaces.
- (b) BMPs of the South Carolina Forestry Association shall be employed.
- (c) Forestry areas shall be harvested so that a canopy cover consisting of minimum basal area per acre remains well distributed throughout the area. The landowner shall retain a minimum of at least 25 overstory trees per acre after final harvest, in addition to the required forested buffer of 50 feet along all street frontages. The landowner shall immediately pursue planned natural regeneration methods, whereby four to 12 seed harvesting trees are left uncut, or 20 to 30 shelterwood harvesting trees are left uncut. Either method is acceptable as long as the required buffer is provided, and the method recognized by the state for responsible forestry practices. For any area of protected resources that exceeds more than five acres in total, or in an individual area, the harvesting shall be phased so that a balance is retained between the area cut, frequency of harvesting, area that is mature, and area growing back taking into account the time needed for the forest to return to its initial state or, in the case of young forest areas, to reach a mature state. (Ord. No. 99-12, § 1 (05.321), 4-26-1999)

Colleton County

Section 4.5-3 Exceptions

Commercial timber, tree farms, and nurseries, public utilities and agricultural operations and land disturbing activity of less than two acres on a single lot or parcel are exempt from the protective requirements of this Section. Property cleared under the exemptions of this section shall not be redeveloped and the county shall withhold any development permit for a period of 24 months.

Florence County (*also applies in City of Florence, City of Johnsonville, Town of Olanta, Town of Quinby, Town of Scranton, and Town of Timmonsville*)

Section 4.2.2 Applicability and Exceptions for Tree Removal Provisions

All sites and uses, public and private, in all zoning districts are subject to the tree removal provisions of this article except:

1. Tree nurseries and tree harvesting in conjunction with a bona fide commercial silviculture operations, provided however, that all hardwood trees with a diameter at breast height (DBH) of twenty-four (24) inches or greater, and all trees with a DBH of eight (8) inches or greater within ten (10) feet along property lines are subject to the tree removal provisions. Notice of tree harvesting shall in all events be given to the Zoning Administrator in advance of harvesting.

Section 4.2.3 Applicability and Exceptions for Landscaping and Tree Conservation Requirements

All sites and uses, public and private, in all zoning districts are subject to the landscaping and tree conservation requirements except those listed below. However, limited or special provisions apply to certain sites and uses as specified in the particular sections referenced:

5. Any site being operated as a licensed plant or tree nursery, for bona fide agricultural uses, or for bona fide commercial silviculture operations, provided, however, that development in connection with any building or parking lot on any portion of the site shall cause that portion of the site to be subject to the landscaping requirements.

Georgetown County

1106. **EXCEPTIONS TO THESE REGULATIONS.** The following are exceptions:

- 1106.3 The operation of ongoing, managed timber production industries, and the ability of public utilities and electric suppliers to maintain safe clearances around utility lines shall be exempt from this Ordinance.

Horry County

Section 527.1

(D). Exemptions.

The following land use activities shall be exempt from the provisions of the landscape, buffer, and tree preservation provisions as described below.

- (1). Agricultural activities involving the continuous production of field crop, livestock, and evergreen and deciduous nursery stock commodities for profit.
- (3). Forestry activities involving the continuous production of wood fiber commodities for profit.

Lexington County

Sec. 14-113. Scope of regulations.

Except as otherwise stated, the regulations set forth herein shall apply ... with the exception of the following development conditions/activities:

- (2) Any land used for crops and animal raising, as defined in the county zoning ordinance. This definition includes the raising of trees, vines, field, forage or other plant material intended to provide food or fiber. However, processing areas, buildings, and retail or wholesale activities related to crops and animal raising are not exempt from the terms of this article.

Newberry County

702 Tree and root protection

Timber harvesting is permitted as long as the appropriate Best Management Practices (BMP's) are followed.

York County

Section 155-530

Agriculture, silviculture, horticulture, nursery operations, and activities associated with the York County Stormwater Management and Sediment Control Ordinance ... are exempt from this subchapter.

City of Beaufort

Section 5-6144. Applicability of tree removal provisions; exceptions.

All sites and uses, public and private, in all zoning districts are subject to the tree removal provisions of this article except:

- (1) Tree nurseries and tree harvesting in conjunction with bona fide silviculture operations ... provided, however, that all hardwood trees with a diameter at breast height (DBH) of twenty-four (24) inches or greater, and trees with a DBH of eight (8) inches or greater within ten (10) feet along all property lines, are subject to the tree removal provisions. Notice of tree harvesting shall in all events be given to the administrator in advance of harvesting.

Town of Bluffton

Section 4.14 Tree Protection Standards

4.14.1 It is the expressed intent of these Tree Protection Standards that all site planning and design for development of land be undertaken with a survey of trees on the property and that the final placement of buildings, structures, roads, utilities, and other features minimizes the removal of existing trees on the property.

Z. Clear cuts are strictly prohibited unless it is part of a silviculture activity. A permit is required to clear-cut parcels within the Town limits which must be obtained prior to cutting. No development is to take place of the clear-cut parcel within two (2) years of cutting. Property owners found to be in violation of this Ordinance are subject to penalties as described in the *Town of Bluffton Municipal Codes*.

City of Charleston

Section 54-326. Exemptions.

The regulations set forth herein shall apply to all real property within the city limits of Charleston, subject to the following exemptions:

- b. Commercial Timber Operations. Commercial timber operations shall be exempt from the provisions of this Ordinance, except that a fifty foot (50') buffer of existing trees shall be maintained adjacent to all public rights-of-way.
- d. Commercial Tree Operation Exemption. Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this Ordinance.

City of Clinton

3.20: Tree Protection

3.20.2: Exemptions:

B. Commercial Timber Operation Exemption: Commercial timber operations shall be exempt from the provisions of this Ordinance. The City encourages the retention of a fifty foot (50') buffer of existing trees adjacent to all public rights-of-ways.

City of Columbia

Sec. 17-794. Timber harvesting: Commercial timber operations.

- (a) *Notification.* The property owner shall notify the Zoning Administrator prior to beginning any timber harvesting or land clearing conducted as a commercial timber operation.
- (b) *Burden of proof of legitimate commercial operation.* It shall be the burden of the property owner to prove that any timber harvesting or land clearing is conducted as a commercial timber operation. A forestry plan shall be submitted that demonstrates that the intended forestry activities will contribute to the long term production of marketable forest products and ensure the continued existence of forests through regeneration. Conducting a timber sale as the sole timber management activity does not constitute a 'commercial timber operation.'
- (c) *Buffer and Best Management Practices.* All timber harvesting shall comply with the buffer requirements and other voluntary protective measures known as "Best Management Practices" and published by the South Carolina Forestry Commission. This shall include an undisturbed buffer along the entire perimeter of the property, including road frontages, except for approved access crossings. Such buffer shall be fifty (50) feet wide or equal to the required setback for the zoning district in which the property is located, whichever is greater.
- (d) *Development permits.* If an owner harvests timber reducing the density factor to less than 30 units per acre under the claim of good faith commercial timber operations, he/she shall have the burden of proving such claim by clear and convincing evidence. If timber harvesting has been conducted under the commercial timber operation notification,

permits for development will be denied if requested within three years of the subject harvesting, regardless of ownership .

Sec. 17-795. Timber-harvesting: Non-commercial operations. Any non-commercial timber operations shall meet the following requirements:

- (a) *Notification.* The property owner shall notify the Zoning Administrator prior to beginning any timber harvesting or land clearing conducted as a non-commercial timber operation. Such notification shall indicate how the owner plans to meet the required density factor.
- (b) *Required density factor for the site (DFS).* Compliance with the minimum tree density of thirty (30) units per acre following the completion of timber harvesting. Trees used to meet the minimum tree density requirements shall be in fair or better condition (See **Sec. 17-421** (d)).
- (c) *Buffer and Best Management Practices.* All timber harvesting shall comply with the buffer requirements and other voluntary protective measures known as “Best Management Practices” and published by the South Carolina Forestry Commission. This shall include an undisturbed buffer along the entire perimeter of the property, including road frontages, except for approved access crossings. Such buffer shall be fifty (50) feet wide or equal to the required setback for the zoning district in which the property is located, whichever is greater.

Sec. 17-796. Revegetation required.

If timber harvesting occurs, and the owner is unable to prove that the work is conducted as a commercial timber operation, or if non-commercial timber harvesting reduces the density factor for the site to less than the required 30 units per acre, the owner shall be responsible for revegetating the site. Revegetation shall provide 40 units per acre and shall be installed within twelve (12) months of the notice of violation.

City of Conway

1.1055

Tree Removal from Undeveloped Lots

No trees equal to or in excess of eight inches (8”) d.b.h. shall be removed from an undeveloped lot without first obtaining site plan approval from the appropriate Boards or officials of the City of

Conway provided, however, the following activities shall be exempt from this requirement:

1. The removal of trees in conjunction with tree farms, agricultural practices, commercial nurseries, or the harvesting of timber by commercial timber companies.

City of Georgetown

Section 1407 Exemptions and exceptions.

1407.5 Commercial timber operations shall be exempted from the provisions of this Article, except that a fifty-foot-wide perimeter buffer around the site of timber operations shall be maintained in which no trees may be removed.

1407.6 Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this Article with respect to their removal from the commercial sites upon which they are grown.

City of Greer

ARTICLE 12 TREE PROTECTION

12.4 Exceptions

- A. Public and private utility companies, commercial timber, tree farms and nurseries, and agricultural operations are exempt from the protective requirements of this section. Property cleared under the exceptions of this section shall not be redeveloped and the city shall withhold any development permit for a period of 24 months.

City of Hartsville

Section 86-257. Exemptions.

This division shall not apply to the following:

- (5) Any land zoned or used for agricultural purposes, including timberland.

Town of Irmo

4-5.3. *Exceptions.*

Commercial timber, tree farms and nurseries, and agricultural operations are exempt from the protective requirements of this section. Property cleared under the exemptions of this section shall not be redeveloped and the town shall withhold any development permit for a period of 24 months.

Town of Lexington

1-7.0 Exemptions

(4) Commercial Timber operations.

Town of McClellanville

4. TREE REMOVAL

b) EXEMPTIONS:

The following activities are exempt:

1. bonafide timber harvesting on land having an agricultural assignment

Town of Meggett

9.1 General

3. Applicability and Exemptions

C. Full Exemptions

The following uses and activities shall be exempt from all provisions of this article:

2. Commercial Timber Operations

Commercial timber operations shall be exempt from the provisions of this article.

3. Commercial Nursery Operations

Commercial nursery operations shall be exempt from the provisions of this article.

Town of Moncks Corner

Section 16-101. Authority and purpose.

(c) Nothing included in the provisions of this article is intended to prohibit agriculture, silviculture, horticulture or nursery operations within the city.

Section 16-121. Jurisdiction.

(a) The regulations set forth herein shall apply to all real property within the limits of Moncks Corner, subject to the following exemptions:

- (1) *Commercial timber operations.* Commercial timber operations shall be exempt from the provisions of this article. The town encourages the retention of a 50-foot buffer of existing trees adjacent to all public rights-of-way.
- (3) Commercial tree operation exemption. Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this article.

Town of Mount Pleasant

Section 156.222 JURISDICTION; EXEMPTIONS.

The regulations set forth herein shall apply to all real property within the corporate limits of the town, subject to the following exemptions:

- (A) *Commercial timber operations.*
 - (1) Commercial timber operations shall be exempt from the provisions of this chapter.

(2) The town encourages the retention of a 50-foot buffer of existing trees adjacent to all public right-of-ways.

(C) *Commercial tree operation exemption.* Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this chapter.

City of Myrtle Beach

903.8. Criteria for issuance of protected tree removal permits.

(1) No person shall remove, cut above ground, or otherwise disturb any protected tree without first procuring a permit. Protected trees may be removed for the following reasons:

j. Trees to be removed for commercial timbering purposes.

City of North Charleston

Section 6-16. Tree protection:

(g) *Exemptions.* Commercial tree operations, all pine trees within any zoning classification, and trees located on existing developed parcels ... are exempt from the provisions of this section.

City of North Myrtle Beach

Section 23-67.2. Applicability and exemptions.

All properties shall comply with requirements of this article except as otherwise exempted below:

(3) Nursery—Trees grown specifically for sale, as a part of the commercial activity, shall be exempt.

Town of Pendleton

SECTION 302 – BUILDING PERMIT REQUIRED

... Specifically, as the citizenry desires the natural setting of the Pendleton area to be maintained ... the felling of any live trees twelve inches (12”) or larger in diameter, DBH, is strictly prohibited within all districts except the AF [Agriculture-Forest District, below] district, unless such fell of trees is authorized by a building permit (DBH is the Diameter measured at Breast Height—4 ½ feet above the ground).

... Landowners who cut, or contract to have cut, trees for the purposes of sale and/or development shall require a permit under the provisions of this section.

SECTION 1210—AF, AGRICULTURE-FOREST DISTRICT

1210.1 Purpose of District: The purpose of this Section is that the AF Zoning District be utilized and reserved for general farming and tree growing purposes as well as certain specialized residential, recreational or other public purposes. The regulations which apply within this district are designed: (1) to encourage the formation and continuance of a compatible environment for public and recreational areas, truck farms, orchards, livestock ranches, dairies, forest management areas, horticultural nurseries and other agricultural uses which involve the growing of crops, livestock animals, and/or trees; (2) to provide the suitable services, commercial and otherwise, to residents of AF districts; and (3) to discourage any encroachment by premature housing development capable of commercial and/or industrial operations, or other uses adversely affecting the basic agricultural or open character of the district.

1210.2 Permitted Uses: Uses permitted in the district without review include:

1210.2.1 Farm or establishments for the growing, care and handling of field crops, truck gardening products, fruit and nut trees

...

1210.2.2 Tree farm and/or forest management area;

1210.2.3 Horticultural nursery

City of Simpsonville

10:5.2 Applicability

The regulations set forth herein shall apply to all real property within the City of Simpsonville subject to the following exemptions:

C. Commercial nursery operations which are in business for the planting, growing, and sale of plants and trees.

Town of Summerville

Sec. 32-324. Tree protection.

(b) *Intent.* The intent of this section is to encourage the protection and replacement of trees consistent with the economic and healthful enjoyment of private property. The intent is not punitive, or to cause hardship to any individual, private firm or public agency which uses every care and diligence to protect trees within the town. Nothing included in the provisions of this section is intended to prohibit agriculture, silviculture, horticulture or nursery operations within the city.

(d) *Jurisdiction.* The regulations set forth in this section shall apply to all real property within the town limits, subject to the following exceptions:

(1) *Commercial timber operations.* Commercial timber operations shall be exempt from the provisions of this section. The town encourages the retention of a 50-foot buffer of existing trees adjacent to all public rights-of-way.

(3) *Commercial tree operation exemption.* Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this section.

19.105. TREE REMOVAL.

b. Permits may be issued by a Code Enforcement Officer without consultation of the Tree Committee to a tree owner or his agent when one or more of the following conditions exist:

5. Trees are being cut as a commercial timber operation, provided a fifty (50) foot wide perimeter buffer of all existing trees is maintained in an undisturbed manner. All timber operations located in Walterboro's historic districts must be reviewed by the City Tree Committee. The Tree Committee may apply additional restrictions to safeguard the integrity of the historic districts.

6. Trees grown specifically for sale by commercial nurseries are exempt from the provisions of this article with respect to their removal from the commercial sites upon which they are grown.

APPENDIX E: PARKING LOT LANDSCAPING SPECIFICATIONS

A note on the formatting of the ordinances: because so many different styles are used in codifying ordinances, we felt it was best to maintain each ordinance's original formatting as close as possible to avoid confusion.

Aiken County

Section 24-122(e)(2). *For nonresidential uses.* Required landscaping shall be provided as follows:

b. Within the interior, peninsula or island type landscaped areas shall be provided for any open vehicular use area containing more than twenty (20) parking spaces. Landscaped areas shall be located in such a manner as to divide and break up the expanse of paving and at strategic points to guide travel flow and directions. Elsewhere, landscaped areas shall be designed to soften and complement the building site.

Beaufort County

Sec. 106-1681. Parking area landscaping standards.

(a) *Parking lots.* Landscaping for parking lots shall include the following:

- (1) One canopy tree per number of parking spaces specified in table 106-1617.
- (2) Ground cover and one understory tree of 1 1/2 inches caliper or six shrubs of at least five-gallon pot size.
- (3) Each canopy tree shall be planted in a planting island or space with a minimum total area of 162 square feet. The developer shall have the ability to combine islands or to use continuous planting strips between parking aisles. In small parking lots, the islands may be the lot's corners. The landscaping required by table 106-1617 shall be located within the parking lot in order to visually enhance the parking area and to provide shade for pedestrians. Existing trees that can be preserved by not disturbing the area under their canopy shall count towards the landscaping requirements.

- (4) Figure 106-1681 illustrates two examples of appropriate planting areas and preservation of existing trees, according to one canopy tree per ten parking spaces.

<<FIGURE HERE>>

(b) *Parking bufferyard standards.* Parking bufferyards are required where parking areas abut an existing residential use or residentially zoned land. Parking buffers shall conform with the following standards:

- (1) Where no buffer is required by table 106-1617, a forested buffer 25 feet in width shall be preserved. If no forest cover exists or it cannot be preserved, a 30-foot-wide buffer shall be installed and planted in accordance with section 106-1680.
- (2) When a buffer is required by table 106-1617, a parking buffer shall be required only where the parking buffer is wider than the bufferyard width required by table 106-1617. In that case, the parking buffer shall be used.
- (3) Parking buffers shall not be required in the interior of a residential development; however, the DRT shall review the landscape plan to ensure that site landscaping provides protection where needed.

Charleston County

§9 .5.3 PARKING, LOADING AND VEHICULAR USE AREA LANDSCAPING

A. PARKING, LOADING AND VEHICULAR AREA PERIMETERS

Unless otherwise expressly stated, perimeter landscaping shall be required around the outer perimeter of all off-street, surface parking, loading and vehicular use areas. Parking areas for the exclusive use of single-family or agricultural uses shall be exempt from these requirements. Any off-street parking, loading or vehicular use area that will be entirely screened from view by an intervening building or structure or by a buffer provided to satisfy the standards of this Chapter shall also be exempt from these (parking, loading and vehicular use area) perimeter landscaping requirements.

1. A perimeter landscape area at least 8 feet in depth shall be provided at the perimeter of all off-street parking, loading and vehicular use areas, except where permitted driveway openings are to be provided. Where drainage or other utility easements exist

along property lines, the perimeter landscape area shall be located adjacent to the easement.

2. Required perimeter landscape areas shall be planted in accordance with the following minimum standards:
 - a. One canopy tree shall be provided for each 50 linear feet of parking, loading or vehicular use area perimeter. These trees may be used to satisfy the interior parking lot landscaping requirements.
 - b. A hedge or other landscape material of at least 3 feet in height (at maturity) shall be planted within the perimeter landscape area to provide a continuous landscape element, or a combination of trees, hedge, other durable landscape material or approved wall, fence or earth berm may be used to form the continuous landscape element;
 - c. All portions of the perimeter landscape area not planted with shrubs or trees or covered by a wall or fence barrier shall be planted in grass or ground cover; and
 - d. Parked vehicles may overhang a landscaped area if curbing or wheel stops are installed to prevent any damage to plants within the required perimeter landscape area. Landscaping, walls, fences and earth berms will be so located as to prevent their damage and/or destruction by overhanging vehicles.

B. INTERIOR AREAS

The following interior parking lot landscaping requirements shall apply to all parking lots except those exclusively serving single-family residential or agricultural uses.

1. A minimum of 1 landscape island shall be provided for each 10 parking spaces within an off-street parking area. Required landscape islands shall have a minimum of 325 square feet, variably dependent upon the species of the canopy tree proposed by the designer. Each parking lot bay must terminate with a tree island.
2. Each required landscaping island shall contain at least 1 canopy tree and there shall be no more than 10 parking spaces in a row between tree islands. Interior parking landscape islands that separate double loaded parking bays shall be a minimum of nine (9) feet wide. Canopy trees planted in these islands must be planted in line with the parking stripes (between vehicles) and may be used to satisfy the parking lot tree requirements, however, all parking lot bays must terminate with a tree island. Example shown in Chapter 9 Exhibits.

3. Curbs, wheel stops or other approved protective barriers shall be installed around all required landscape islands, as approved by the Planning Director.
4. Landscaping provided to meet the right-of-way buffer standards of Section 9.5.4 of this Chapter may not be used to satisfy interior parking lot landscaping requirements. Canopy trees provided to meet perimeter adjacent use buffer landscaping requirements may be counted to satisfy interior parking lot landscaping requirements.

Edgefield County

§152.063 LANDSCAPING.

(E) *Landscaping Requirements.*

(1) Required landscaping shall be provided as follows:

(b) Within the interior, peninsula or island type landscaped areas shall be provided for any open vehicular use area containing 20 or more parking spaces. Landscaped areas shall be located in such a manner as to divide and break up the expanse of paving and at strategic points to guide travel flow and direction. Elsewhere, landscaped areas shall be designed to soften and complement the building site and separate the building from the vehicular surface area.

Greenville County

6:9.8 Landscaping of Parking Area

Roadside Buffers

All new off-street parking lots with ten (10) or more spaces located adjacent to existing public right(s)-of-way shall establish roadside buffers. Roadside buffers shall be located outside of the rights-of-way of existing roads and shall be located outside the future rights-of-way of all GRATS and SIB projects identified in the Transportation Corridor Preservation Ordinance of Greenville County.

- A. The minimum roadside buffer width shall have an average planting width of eight (8) with the minimum width for any buffer yard being five (5) feet. Buffers shall contain the following plant materials:

- An average of one (1) tree for every sixty (60) feet of linear road frontage. Trees shall be spaced so that there is a minimum of one (1) tree for every two hundred (200) linear feet of road frontage.
 - Shrubs spaced to provide a continuous evergreen screen within three (3) years of installation.
- B. Within the buffer yard, fences, walls, earthen berms or any combination thereof may be used to meet the requirements of this section so long as they are a minimum of thirty (30) inches in height and provide a continuous opaque visual screen. Berms shall have a side slope no greater than 2:1.
- C. Where existing overhead power utility lines preclude sufficient space for a shade tree to grow then two (2) small trees shall be substituted for each required shade tree.

Interior Plantings

In addition to all other landscaping requirements, all new off-street parking lots with sixty (60) or more spaces shall provide and maintain landscaped planting areas within the interior of, and adjacent to, the parking lot.

- A. Interior planting islands shall have a minimum planting area of eight (8) feet wide by eighteen(18) feet long.
- B. In addition to the required trees and shrubs interior planting areas shall be grassed or covered with mulch.
- C. All planting areas shall be protected from vehicular intrusion by the installation of curbing, wheel stops.
- D. Each landscaped planting area shall contain trees and shrubs at the rates listed below rounded upward to the next whole number:
- One (1) tree for every fifteen (15) spaces
 - One (1) shrub for every five (5) parking spaces
- E. Interior planting areas shall be designed within or adjacent to the parking area(s) as:
- Islands, located at the end of parking bays;
 - Islands, located between parallel rows of cars;
 - Driveway medians, a minimum of eight (8) feet in width;
 - Intermediate islands; or
 - A combination of the above
- F. Trees and shrubs must be planted within twenty (20) feet of the parking area to satisfy the interior planting requirements.
- G. The design size and shape of the interior planting areas shall be at the discretion of the owner; however, no parking space shall be:
- Located farther than ninety (90) feet from the trunk of a shade tree;
 - Separated from a shade tree by a building or other structure.
- H. Parking structures are excluded from interior landscape areas.

Planting Material Specifications

- A. A minimum of 75% of trees planted to meet this requirement shall be large shade trees (unless precluded by utilities.)
- B. Large shade trees shall have a minimum planting size of two (2) inches caliper.
- C. Small trees and multi-stem trees shall have a minimum planting height of six (6) feet tall.
- D. Evergreen shrubs shall have a minimum installed height of twelve (12) inches and a minimum height of thirty (30) inches within three (3) years of installation. All shrubs inside the site triangle at points of ingress and egress shall not exceed thirty-six (36) inches in height.

Existing Trees

It is encouraged to use existing trees to meet the requirements of this section. If existing trees are preserved to meet the roadside buffer or interior planting requirements then a reduction in the new planting requirements will be given. Existing trees will be credited towards meeting the requirements of this section as follows:

One tree (2 - 6 inches diameter at breast height)	= 1 planted trees
One tree (6 – 10 inches diameter at breast height)	= 2 planted trees
One tree (10 – 15 inches diameter at breast height)	= 3 planted trees
One tree (15> inches diameter at breast height)	= 4 planted trees

Protection of Existing Trees

Any trees preserved on a development tract to receive credit shall meet the following protection standards. A root protection zone shall be established around all trees to be preserved. The root protection zone shall be clearly shown on all grading and site plans.

- A. Root Protection Zone – The land area around the base of a tree in which disturbances are prohibited in order to protect the roots of the tree and aid the tree’s survival. The root protection zone shall be equal to one (1) foot radius for every inch of tree diameter measured at a point four and one-half (4½) feet above ground. Root protection zone measurements shall be rounded off to the nearest foot.
- B. Protective Barrier – A protective barrier shall be installed at the start of grading, and be located at the outer edge of the root protection zone. Protective barriers shall be posted as a “Tree Save Area”. This procedure shall be incorporated as a note on the grading and erosion control plans. Protective barriers shall be constructed of a material resistant to degradation

by sun, wind, and moisture and shall remain in place until all construction is complete.

- C. No storage of materials, dumping of waste materials, fill, or parking of equipment shall be allowed within the root protection zone, and no trespassing shall be allowed within the boundary of the root protection zone. Utility easements and borings are permitted.

6:9.9 Exceptions

- A. Any lot used for the express purpose of sales and storage is exempt from the landscaping requirements.
- B. Parking Structures (multi-level)

6:9.10 Owner Responsibilities and Maintenance

The owner, his successors, or assigns, are responsible for maintaining all required plant material in good health. Any planted trees which die or become unhealthy and used to meet the provisions of this section must be replaced within one year with vegetation which conforms with the initial planting standards of section 6:9.8.

Horry County

- E. Surface Parking and Interior Lot Landscape Requirements.

Off-street surface parking lots shall contain landscape treatments as follows:

1. Parcels consisting of less than three (3) acres of vehicle use area shall contain trees and other plantings specified herein whereby each side of a parking aisle consists of no greater than 15 parking spaces between each tree planted island. Furthermore, every parking space shall be within 50 feet of the trunk of an adjacent existing or planted tree. Refer to Exhibit A.
2. Parcels consisting of greater than three (3) acres of vehicle use area shall contain trees and other plantings specified herein whereby each side of a parking aisle consists of no greater than 25 parking spaces between each tree planted island. Furthermore, every parking space shall be within 50 feet of the trunk of an adjacent existing or planted tree. Refer to Exhibit A.
3. The minimum planting area for each maintained existing or planted canopy tree shall be at least 200 square feet. If shared with other

trees, at least 80 square feet for each additional tree shall be added. The minimum planting area for each understory tree shall be 80 square feet. If shared with other trees, at least 80 square feet for each additional tree shall be added. Also note:

- a. Each planting area or island shall not be less than 4 feet in width in any direction.
 - b. Paved or striped islands greater than 50 square feet shall not be allowed.
4. The front and sides of primary use buildings shall be transitioned into the surrounding environs with continuous foundation plantings, except where building access is required. Foundation planting strips shall not be less than 7 uncovered feet in width along the front and sides of such buildings.
 5. Accessory structures shall be transitioned into the surrounding environs with foundation plantings in planting strips not less than 4 feet in width along the sides of such structures, except where building access is required.
 6. Deciduous trees shall be a minimum of two (2) inches in caliper and 12 feet in height, and evergreen trees shall be at least 7 feet in height after planting. At least 50% of interior lot trees shall be canopy trees with 25% of these trees being of the evergreen species. A diversity of trees, native or suitable to the areas climatic and site specific environmental conditions, shall be retained or provided. Refer to Appendix A--Plant List.
 7. Trees planted near overhead utility lines shall be of a species which will not exceed 15-20 feet in height at maturity.
 8. The remaining ground areas shall be planted primarily in evergreen plant species including shrubs and/or groundcovers; or a combination of shrubs, groundcovers, and sod can be provided. Shrubs initially shall be at least 15 inches in height after planting. A diversity of plant materials, native or suitable to the areas climatic and site specific environmental conditions, shall be retained or provided. Refer to Appendix A --Plant List.
 9. Plantings shall be arranged in observance of the safe vehicle sight distance requirements as depicted in Exhibit B.
 10. All supplemental plantings in landscape areas shall be irrigated with an automatic irrigation system, or be within 100 feet of a water hose bib.

Lancaster County

Section 11.14 Shade trees in parking areas.

1. Vehicle accommodation areas that are required to be paved by this chapter, as well as vehicle accommodation areas in the I-1 and I-2 districts that contain more than 20 parking spaces, shall be shaded by deciduous trees (either retained or planted by the developer) that have a minimum caliper of 1.5 inches or are contained in 25-gallon containers at the time of planting. When trees are planted by the developer to satisfy the requirements of this subsection, the developer shall choose trees that meet the standards set forth in Chapter 22.
2. In vehicle accommodation areas that are required to be paved by this Chapter, as well as vehicle accommodation areas in the I-1 and I-2 districts that contain more than 20 parking spaces, a tree of the type described in subsection 1. along with six (6) shrub/evergreens at least 18 inches in height at the time of planting shall be installed for every ten parking spaces or fraction thereof.

For example: If a development requires 150 parking spaces, the required landscaping is as follows: $150 \text{ (parking spaces)} / \text{(divided by)} 10 \text{ (landscaped areas)} = 15 \text{ landscaped areas}$. Fifteen landscaped areas equals a total of 2,250 square feet of landscaped area for the parking lot ($15 \text{ landscaped areas} \times 150 \text{ square feet}$ (square feet required for each landscaped island)). Therefore, at least 2,250 square feet is the amount of landscaping required to be placed surrounding the parking lot. The required landscaping shall be installed along the periphery of the parking lot.

3. No paving shall be placed within 15 feet (measured from the dripline) of any tree retained to comply with subsection 1., and new trees planted to comply with subsection 1. New trees planted to comply with subsection 1. shall be located so that they are surrounded by at least 150 square feet of unpaved area. This area shall be at least 15 feet in width.
4. Vehicle accommodation areas shall be laid out and detailed to prevent vehicles from striking trees. Vehicles shall be presumed to have a body overhang of three feet, six inches.
5. The landscaping requirement for the vehicle accommodation areas shall not be used to meet any other buffering requirement of this ordinance.

Lexington County

Sec. 14-133. Parking lots,

(3) *Trees.*

a. All developments with greater than eight surface spaces of parking area and associated circulation must include the use of large canopy trees throughout the parking area. In no case shall a parking space be greater than 50 feet from the trunk of a tree. Trees shall be provided at a minimum average density of 1 tree per every 8 spaces.

b. Where overhead utilities exist or are planned, understory trees may be required instead of large canopy trees, at a replacement density of three understory trees for each canopy tree.

Newberry County

704 Types of landscaping

C. TYPE C (Interior Plantings)

LOCATION & REQUIRED USAGE:

· Interiors of all parking areas with more than 16 parking spaces

Large canopy trees must be provided in each parking lot at a minimum average density of one (1) tree for every (10) parking spaces in the lot.

No off-street parking space may be located more than one hundred (100) feet from the trunk of a large canopy tree.

No tree may be planted closer than three and one-half (3 ½) feet to the back of a curb or the paved portion of the parking lot

Pickens County

Section 4.2.4 Types of Open Space

(b) For Non-Residential Uses

- (2) Within the interior, peninsula or island type landscaped areas shall be provided for any open vehicular use area containing more than twenty (20) parking spaces. Landscaped areas shall be located in such a manner as to divide and break up the expanse of paving and at strategic points to guide traffic flow and directions. Elsewhere, landscaped and open space shall be designed to soften and compliment the building site. Maintenance shall be provided in accordance with the requirements for landscaped areas for residential uses.

Richland County

Sec. 27-4.3. Planting.

27-4.30 All surface parking lots shall be landscaped in accordance with the following:

- (a) In addition to the street front and buffer yard landscape areas required by Article 2 and Article 3, a minimum of fifteen (15) square feet of landscape area shall be provided in the parking lot for each off-street parking space in the lot; and
- (b) Large canopy trees meeting the requirements of section 27-4.5 and determined to be suitable for planting in paved areas by a qualified horticultural authority are planted in protective tree grates with adequate provisions for watering, oxygenation and maintenance of both trees and tree grates as trees mature.

Sec. 27-4.4. Screening.

27-4.40 Surface parking lots shall be screened in accordance with the pertinent requirements of section 27-2.4 and section 27-3.4.

Sec. 27-4.5. Trees.

27-4.50 Large canopy trees must be provided in each parking lot at a minimum average density of one (1) tree for every ten (10) parking spaces in the lot.

27-4.51 No off-street parking space may be located more than one hundred (100) feet from the trunk of a large canopy tree.

27-4.52 No tree may be planted closer than three and one-half (3 1/2) feet to the back of a curb or the paved portion of the parking lot.

Sec. 27-4.6. Special.

27-4.60 When at least twenty-five (25) percent of all outdoor vehicular pavement area, or at least fifty (50) percent of all outdoor pedestrian pavement area, consists of decorative or permeable pavement, the required average density of trees required in parking lots shall be decreased by twenty-five (25) percent.

27-4.61 When asphalt curb with acceptable anchored concrete wheel stops or concrete curb and gutter is provided for all vehicular paving and parking in the lot, the required average density of trees in parking lots shall be decreased by twenty-five (25) percent; the required average density of trees in parking lots shall be decreased by fifty (50) percent when stone, unit masonry or other decorative curb is provided in lieu of concrete or asphalt curb.

27-4.62 The required average density of trees in parking lots shall be increased by fifty (50) percent for landscape plans which propose unpaved parking lots.

Spartanburg County

Section 2.02-3 Landscaping

5. Landscaping Requirements

Required landscaping shall be provided as follows:

- (2) Along the outer perimeter of a lot or parcel, where required by the bufferyard provisions of this Article to buffer and separate incompatible land uses. The amount specified shall be as prescribed by Section 2.02-2.
- (2) There is no landscaping requirement for sites needing fewer than 20 parking spaces. Landscaped areas shall be provided for any open vehicular use area containing 20 or more parking spaces, or fraction

thereof. Landscaped areas shall be located in such a manner as to divide and break up the expanse of paving and at strategic points, but shall contain not less than one canopy tree per 20 parking spaces, or fraction thereof. This will allow for clustering of trees. In no case shall a parking space be located more than 100 feet from the trunk of a canopy tree. Elsewhere, landscaped areas shall be designated to soften and compliment the building site. (Amended 5/15/2000)

6. Landscaped Areas

- (1) All landscaped areas in or adjacent to parking areas shall be protected from vehicular damage by a raised concrete curb or an equivalent barrier of six (6) inches in height. The barrier need not be continuous.
- (2) Interior landscaped areas containing canopy trees must have a minimum area of eight (8) feet by eight (8) feet in size.
- (3) Landscaped areas adjacent to parking spaces shall be landscaped so that no plant material greater than 12 inches in height is located within two feet of the curb or other protective barrier. (Plant material greater than 12 inches in height would be damaged by the automobile bumper overhang or by doors swinging open over the landscaped areas.)

Sumter County and the City of Sumter (consolidated)

8.d.7. **Buffering:**

c. **Amount Required:**

2. Parking lots, garbage collection and utility areas, and loading and unloading areas shall be screened around their perimeter by a buffer strip a minimum of five (5 ft.) feet wide

8.d.8. **Parking Lot Landscaping:**

- a. **Amount Required:** Within parking lots, landscaped concrete planters should be considered as part of the overall planned landscape concept. Planting required within the parking lot is exclusive of other planting requirements, such as for shade trees planted along the street frontage.

- b. **Location:** The landscaping should be located in protected areas, such as in landscape islands, center islands, at the end of bays, around the perimeter of buildings, or along walkways.
- c. **Plant Type:** A mixture of hardy flowering and/or decorative evergreen and deciduous trees may be planted. The evergreens should be used along the perimeter of the parking lot for screening, and the deciduous trees for shade within the lot. The area between trees shall be mulched and planted with shrubs or ground cover. Any area that will be under the overhand of vehicles shall be mulched or covered with paving material.
- d. **Maintenance:** Plantings shall be watered regularly by means of an automatic and timed irrigation system or other acceptable methods of periodic watering.
- e. Where there is a planned expansion of the parking lot of 25% or greater than the number of parking spaces found within an existing parking lot then the entire parking lot (existing and expanded) shall meet the landscaping and buffering requirements of this Ordinance after the expansion. Also, where the planned expansion of a parking lot is greater than 5%, then the requirements for perimeter buffering around the existing and expanded parking lot shall be installed.

City of Aiken

4.6.7. LANDSCAPING REQUIREMENTS

D. Landscaping in Vehicular Use Areas

1. Perimeter Planting Areas

Each parking area should be defined by linear landscaped areas to delineate driveways and control traffic flow. Such linear landscaped areas should be at least eight feet in width and include canopy trees as determined by the Planning Director unless such trees would interfere with traffic movement in which case other types of trees may be used.

2. Islands Between Parking Spaces

In a parking area with more than one double bays of parking spaces, no more than 10 spaces are allowed in a row without a landscaped island of at least 300 square feet excluding curbing and having a minimum width of eight feet. Each such island shall have at least one canopy tree allowed in parking lots as set forth in the

Approved Tree List. Such islands must be offset so that they are evenly distributed in the parking area and are not in straight lines.

3. Islands at End of Row

A landscaped island of at least 100 square feet in area shall be provided at the end of each single row of parking spaces closest to a building; each island shall have a berm two feet high planted with ground cover, or, where there are two such islands together totaling at least 200 square feet, at least [sic] small tree allowed in parking lots as set forth in the Approved Tree List. A landscaped island of at least 150 square feet shall be provided at the end of each single row of parking spaces nearest the street frontage; where there are two such islands together totaling at least 300 square feet, there shall be at least one canopy tree. The islands shall be designed and maintained so as not to obstruct visibility for motorists. The Planning Director may modify or waive this provision if compliance would not be practical.

4. Trees in Islands

Islands shall be located to preserve the maximum number of existing trees. The maximum number of trees must be planted as determined by the Planning Director taking into account the size of the trees at maturity. The Planning Director shall approve the size, type, and location of the trees. Any combination of large and small trees may be planted to meet the minimum number required by this provision with the approval of the Planning Director.

City of Beaufort

Section 8. Parking area screening requirements.

(a) All parking areas located within fifty (50) feet of any public road, or private road serving more than one property, shall be screened from the road with shrubbery, walls, fences, berms, drop in grade or some combination. These devices shall be installed so as to screen the parking from the road along the front buffer and along the side buffer adjoining the parking lot. Screening along the side buffer shall not be required beyond fifty (50) feet from the road right-of-way. The required screening may be satisfied either with a shrub coverage of fifty (50) percent in these buffers using shrubs projected to reach three and one-half (3½) feet in height or with some combination of shrubs, walls, etc. which achieves a minimum fifty (50) percent opacity up to a height of three and one-half (3½) feet.

(b) Within the Beaufort Historic District the screen shall be four and one-half (4½) feet in height and achieve a minimum opacity of ninety (90) percent;

(c) It is preferable to screen with groupings of shrubs rather than a regular hedge except within the Beaufort Historic District and in other pedestrian oriented areas;

(d) Shrubbery used for screening of parking lots shall comply with the following:

(1) Shrubs shall be at least two and one-half (2½) feet in height and three and one-half (3½) feet in height in the Beaufort Historic District at installation and projected to reach the required height within four (4) years

(2) Shrubs shall be dense in form unless used in sufficient groupings as reasonably determined by the Administrator.

(3) At least two-thirds of the shrubs shall be evergreen.

(e) For the purpose of determining opacity, the area bounded by the shrub at its projected size in three (3) years shall be deemed to be practically one hundred (100) percent opaque provided that appropriate dense plants are used.

(f) Without being required to do so, where it will be harmonious with the streetscape placement of parking lots at the rear of buildings is strongly encouraged. However, parking lots in the Beaufort Historic District shall be located at the rear of buildings – and as a secondary alternative to the side of buildings – to the extent practicable. Landscaping requirements shall be significantly relaxed by the administrator for lots placed at the rear of buildings.

Section 9. Parking area interior landscaping requirements.

(b) No parking space shall be further than fifty-five (55) feet from the trunk of a broadleaved overstory tree. Coniferous trees shall not be substituted.

(c) Landscaped peninsulas and medians shall be established as follows:

(1) *Landscaped peninsulas.* Landscaped peninsulas measuring at least six (6) feet by twenty (20) feet (or an amount equal to the depth of the immediately adjacent parking space if that depth is less than twenty (20) feet) shall be established parallel to parking spaces and at the end of the parking aisle in order to separate the last space from any adjacent driveways. The number of continuous parking spaces in a row not interrupted by a landscaped peninsula shall not average more than twelve

- (12) over the entire parking lot and shall not be greater than sixteen (16) in any one place.
- (2) *Landscaped medians.* With respect to parking spaces on the interior of parking lots, i.e. those not facing a perimeter buffer or foundation bed, a landscaped median protected from overhanging vehicles shall be installed perpendicular to parking spaces on the opposite side from the parking aisle serving those spaces as follows:
- a. At least fifty (50) percent of the parking spaces shall have the protected median if the protected median is at least six (6) feet wide.
 - b. At least seventy-five (75) percent of the parking spaces shall have the protected median if the protected median is at least (3) feet wide.
- (3) Shrub coverage in the medians and peninsulas shall be at least thirty-three (33) percent.
- (4) Any on-site driveway leading to a parking area but not providing direct access to parking spaces within that parking area shall be separated from the parking area by a landscaped median with a protected width at least three (3) feet wide and have at least thirty-three (33) percent shrub coverage.
- (c) Wheel stops shall be provided in all parking facilities to protect landscaped areas.
- (d) At least one delineated pedestrian crossover should be placed in each median or as needed according to expected pedestrian circulation from parking areas to buildings.
- (e) Landscaping requirements shall be significantly relaxed for parking areas that are located behind buildings.

City of Cayce

Section 10.3-5 Landscaping Requirements

Required landscaping shall be provided as follows:

- (3) **Within the interior**, peninsula or island type landscaped areas shall be provided for any open vehicular use area containing 10 or more parking spaces. Landscaped areas shall be located in such a manner as to divide and break up the expanse of paving and at strategic points to guide travel flow and direction. At a minimum, there shall be provided one tree not less than seven

feet high when planted per 5 required parking spaces. Elsewhere, landscaped areas shall be designed to soften and complement the building site and separate the building from the vehicular surface area.

At a minimum, interior lot landscaping shall be provided in the following amounts:

<u>Use</u>	<u>% of lot</u>
Institutional	20%
Industrial/wholesale/storage	10%
Office	15%
Commercial-retail-service	10%
Multi-family Projects	15%
Manufactured Home Parks	15%

Landscaping along exterior building walls and structures is suggested to separate with greenery the building from the vehicular surface area.

<<FIGURE HERE>>

Town of Central

Section 303. PARKING LOT LANDSCAPING

All parking lots under the jurisdiction ordinance [sic] shall comply with the following standards:

303.3 Whenever the impervious (paved) cover exceeds 10,000 square feet, an area equal to 10% of the total impervious surface must be provided for landscape purposes and tree planting. This 10% requirement is to be in addition to any required perimeter landscaping as outlined in item 1 above. This interior landscaping can be accomplished by using a combination of shade trees and evergreen shrubs planted in landscaped islands within the parking lot. These islands should be a minimum of six (6) feet wide and the length of a standard parking bay.

303.4 Where very large parking areas are required to meet zoning ordinance requirements of the Town of Central, they shall be designed as a series of smaller lots that provide space for no more than one hundred (100) vehicles each. The small parking lots shall be separated by minimum twelve (12) foot internal planting areas that feature trees planted in grass. In general, a series of smaller lots is aesthetically and functionally preferable to one large lot. The minimum twelve (12) foot wide separation strip will be in addition to the requirement for ten percent internal parking lot landscaping.

City of Charleston

Sec. 54-343. Landscaping requirements.

In order to accomplish the intent of this Article, the following requirements shall apply:

- Street frontage landscaping requirements,
 - Parking lot landscaping requirements,
 - Buffer and screening requirements, and
 - Refuse collection facilities landscaping requirements.
- a. Street frontage landscaping requirements. On the site of a building or structure or open lot use providing an off-street surface parking, loading or other vehicular use area, where such area will not be entirely screened visually from all adjacent public rights-of-way by an intervening building or structure, landscaping shall be required along any property boundary that

abuts the public right-of-way of a public street, road or highway. Such landscaping shall be provided as follows:

1. A landscaping area at least five feet (5') in depth shall be located between the abutting right-of-way and any off-street surface parking, loading or other vehicular use area, except where permitted driveway openings and pedestrian ways are to be provided.
 2. The landscaping area shall be planted in accordance with the following standards:
 - (a) One (1) recommended tree shall be planted for each forty linear feet (40') of the landscaping area; or
 - (b) A hedge or other durable landscape material of at least three feet (3') in height shall be planted within the landscaping area so as to provide a continuous landscape; or
 - (c) A combination of trees, hedge, other durable landscape material or approved wall, fence or earth berm may be utilized to form the continuous landscape element; and
 - (d) All portions of the landscaping area not planted with shrubs and trees or covered by a wall or fence shall be planted in grass and/or ground cover.
 3. If the roadway which the development fronts is included in the street tree program administered by the Department of Parks, the landscape plan shall reflect participation in the program.
- b. Parking lot landscaping requirements-peripheral. Except for properties used exclusively for residential uses and zoned to allow ten (10) or fewer dwelling units, landscaping shall be provided around the perimeter of off-street surface parking, loading or other vehicular use areas pursuant to the following standards.
1. A landscaping area at least five feet (5') in depth shall be located between the abutting property lines and the parking, loading or other vehicular use area, except where permitted driveway openings are to be provided. Where drainage or other utility easements exist along property lines, the landscape area shall be located between the parking, loading or other vehicular use area and the utility or drainage easements.
 2. The landscaping area shall be planted in accordance with the following standards:
 - (a) One (1) recommended tree shall be planted for each fifty lineal feet (50') of the landscaping area; or

- (b) A hedge or other durable landscape material of at least three feet (3') in height shall be planted within the landscape area so as to provide a continuous landscape element; or
- (c) A combination of trees, hedge, other durable landscape material or approved wall, fence or earth berm may be utilized to form the continuous landscape element;
- (d) All portions of the landscaping area not planted with shrubs and trees or covered by a wall or fence barrier shall be planted in grass and/or ground cover; and
- (e) Parked vehicles may overhang a landscaped area no more than two and one-half feet (2 1/2'), provided curbing or other wheel stops are installed to insure no greater overhang or penetration of the landscaped islands. Landscaping, walls, fences and earth berms shall be so located as to prevent their damage and/or destruction by overhanging vehicles.

3. The provisions of subsection 1. above, shall not be applicable in the following situations:

- (a) Where any off street surface parking, loading or other vehicular use area will be entirely screened visually from any point of view by an intervening building or structure from abutting property; or
- (b) Where planting and/or walls or fences are required to satisfy screening/buffers standards between different land uses.
- (c) When the property lies within the Old City District or Old and Historic District.

c. Surface parking lot landscape requirements - interior. Except for properties used exclusively for residential uses and zoned to allow ten (10) or fewer dwelling units, or properties within the Old City District or Old and Historic District and limited to fifteen (15) or fewer off-street parking spaces, interior areas of surface parking lots shall include landscape islands in accordance with the following requirements. For the purposes of this section, a landscape island shall have a minimum area equivalent to nine feet (9') wide by a length equal to the abutting parking space and be planted with one (1) recommended tree. Landscape islands planted with one understory tree which are substituted in accordance with subsection 3. below, shall have a minimum area equivalent to six feet (6') wide by a length equal to the abutting parking space.

1. Properties zoned BP (Business Park), LI (Light Industrial), or HI (Heavy Industrial) shall provide one (1) landscape island for every two thousand (2,000) square feet of parking, loading or other vehicular use area. Landscape islands shall be placed at the ends of automobile parking rows with the remainder of required landscape islands placed throughout the vehicular use area or combined into larger landscape islands.
2. All other properties shall provide a minimum total number of landscape islands equivalent to one (1) landscape island for every seven (7) parking spaces. Each parking row shall terminate with landscape islands and no more than fifteen (15) parking spaces shall be permitted in a continuous row without being interrupted by a landscape island.
3. Recommended trees must comprise at least seventy-five percent (75%) of required trees. Understory trees may comprise no more than twenty-five (25%) of required trees.
4. Parking lots having no curbing around landscape islands shall utilize other protective barriers around all required landscape areas, as approved by Zoning Administrator.

Town of Chesterfield

15.439 **Landscaping Requirements.** Required landscaping shall be provided as follows:

(2) **Within the interior,** Peninsula or island type landscaped areas shall be provided for any open vehicular use area containing 20 or more parking spaces. Landscaped areas shall be not less than 5' x 5' and located in such a manner as to divide and break up the expanse of paving and at strategic points, but not less than one canopy tree per 10 parking spaces, to guide traffic flow and directions. Elsewhere, landscaped areas shall be designed to soften and complement the building site.

<<FIGURE HERE>>

At a minimum, interior lot landscaping shall be provided in the following amounts:

<u>Use</u>	<u>% of lot</u>
Institutional	15%

Industrial/wholesale/storage	10%
Office	10%
Commercial-retail-service	5%

Buffer area landscaping may provide up to 50 percent of the above requirement. Landscaping along exterior building walls and structures is suggested to separate with greenery the building from the vehicular surface area.

City of Clemson

Sec. 19-455. Bufferyard, screening, and landscaping specifications.

(d) Vehicular use/Parking lot area requirements.

1. Required interior landscaped area. At least ten percent of the vehicular use area shall be dedicated to landscaping. Accepted interior landscaped areas shall be at least 64 square feet in area with one dimension of at least four feet.
2. Perimeter landscape buffer. Any vehicular use area shall require a minimum landscape buffer of eight feet in depth along the lineal boundary of all streets or alleys and five feet along all other perimeters of the vehicular use area. If perimeter buffer requirements overlap with the bufferyard and screening requirements from section 19-457, table 1, the greater requirement shall apply.
3. Trees within vehicular use areas.
 - a. Within the front setbacks there shall be sufficient upperstory trees within and around the vehicular use area to ensure any portion of the vehicular use area is within 40 feet of a planted or retained tree trunk. The trees shall be located within the front or side street setbacks.
 - b. Outside the front and side street setbacks, there shall be sufficient upperstory trees within and around the vehicular use areas to ensure any portion of the vehicular use area shall be within 50 feet from a tree trunk in a planting area. These trees shall be

located outside the front and side street setbacks on private property.

- c. The minimum landscape area for each tree shall be no less than 170 square feet with four feet minimum distance between all trees and paving at time of planting, measured at the base of the tree.
4. Shrubs within vehicular use areas.
 - a. Within the perimeter buffer, the shrubs shall be equal to one three-gallon evergreen shrub for every three lineal feet of required buffer. Shrubs abutting a street right-of-way shall be arranged to form a continuous row and must occupy the buffer for which they were calculated. The shrubs shall be planted no farther than four feet from the vehicular use area.
 - b. Within the interior vehicular use area the shrubs shall be equal to eight three-gallon shrubs for every 150 square feet of required interior landscaped area. Shrubs must be located within the interior landscaped area for which they were calculated.
 - c. The required shrubs shall be maintained at a height of approximately 36 inches.
 5. Other requirements.
 - a. All exposed soil areas shall be covered with bark, mulch, or other weed control measures.
 - b. All parking spaces shall have a concrete wheel stop permanently placed 30 inches from the edge of any landscape area or buffer.

City of Columbia

Sec. 17-419. Vehicular surface area interior landscaping.

(a) *Purpose, definition and applicability.*

- (1) *Purpose and definition.* A vehicular surface area is any area where motor vehicles are stored or driven. The requirements set forth in this section for the provision of landscaping in such areas are

designed to: enhance the appearance of these areas; provide shade to reduce heat and glare reflected by paving; reduce stormwater runoff; filter particulate and gaseous pollutants from the air; and reduce the glare of headlights and noise on surrounding properties. Developments shall comply with both the applicable street protective yard screening and interior planting requirements set forth in this section.

- (2) *Applicability.* See Section 411 (b) for general applicability and compliance requirements.
- (b) *Vehicular surface area interior planting requirements.*
 - (1) *Standards for vehicular surface area interior plantings (parking lots) other than parking structures (parking garages) or vehicular display areas—full compliance.*
 - a. *Location and size of required interior landscaped planting areas.*
 1. *Placement.* The required interior landscaped planting areas are to be placed in any of the following site locations:
 - [a] Within or adjacent to the parking lots area as tree islands.
 - [b] At the end(s) of parking bays.
 - [c] Inside medians that are five (5) feet or greater in width.
 - [d] As part of continuous street protective yards or transitional buffer yards between rows of cars.

2. *Distance from parking spaces.* No vehicular parking space shall be located farther than forty (40) feet from one (1) tree. Distances between trees and parking spaces separated by an intervening building(s) may not be considered in meeting this requirement.
 3. *Size of planting areas.* Unless otherwise provided, a minimum of two hundred (200) square feet of planting area is required for each tree. Any dimension in any planting area shall be a minimum of five (5) feet.
- b. *Plant quality and spacing for parking lot interior plantings.*
1. *Plant materials.* At least sixty (60) percent of the planting areas provided shall contain living plants—trees, shrubs, groundcover, or turf.
 2. *Trees.* Trees shall be required for vehicular surface area interior plantings at the minimum rate of one (1) shade tree from an approved list for every 3200 square feet of total vehicular surface area. Each planting area shall contain at least one (1) shade tree. Required shade trees should typically be spaced forty (40) feet apart, with minimum spacing of twenty-five (25) feet when planted in groups. Within fifteen (15) feet of overhead power lines, small-maturing trees shall be planted in place of shade trees. Such trees should typically be spaced at least thirty (30) feet apart, with a minimum of twenty (20) feet between trees planted in groups. Trees shall be planted at least ten (10) feet from any tree located in the public right-of-way.

- (2) *Standards for vehicular surface areas (parking lots) other than parking structures or vehicular display areas—partial compliance—for expansions, change of use, and renovations/reuse of building, etc. See **Sec. 17-411** (b), *Applicability*.*
- (3) *Additional requirements for large vehicular surface areas greater than two acres in size—parking lots and vehicular display areas.* In addition to the requirements set forth in **Sec. 17-419** (b)(1) above, all new and expanded vehicular surface areas greater than two acres in size shall meet all of the following:
- a. *Planted medians.* Large vehicular surface areas must be broken by continuous planted medians. A planted median measuring 840 square feet of planted space is required for every two acres, rounded off to the closest two-acre increment. (For example, 3.5 acres shall be rounded off to require two medians.) The minimum median width shall be five feet. The length of the planted median shall be uninterrupted except for access ways approved by the zoning administrator. The amount of impervious surface within the median shall be limited to a maximum of twenty (20) percent.
 - b. *Shade trees.* Large vehicular surface areas, other than vehicular display areas, must contain shade trees planted in the required medians at a maximum spacing of forty (40) feet on center and shall provide each tree with a planting area of at least two hundred (200) square feet.
 - c. *Shrubs and other plants.* Shrubs, ground cover, turf, and other plants shall cover at least sixty (60) percent of the required medians in large vehicular surface areas.

11.1030 Landscape Requirements for the Perimeter of Parking Areas

A. Perimeters Adjacent to Public Rights-of-way:

Parking areas that extend to within 50 feet of a public right-of-way shall provide a landscape screen between the parking area and the right-of-way.

1. If the parking area does not exceed 30,000 square feet in area, then such landscape screen shall be a minimum of ten (10') feet in width and shall contain a minimum of one (1) shade tree and ten (10) shrubs per 35 linear feet of street frontage

<<<<FIGURE INCLUDED>>>>

2. If the parking area exceeds 30,000 square feet in area, then such landscape screen shall be a minimum of fifteen (15') feet in width and shall contain a berm with minimum height of two and one half (2.5') feet above the finished elevation of the parking area. Such a berm shall have a maximum slope of one foot rise to two feet of run (1:2) and a minimum crown of three (3) feet. In addition to the required berm, one (1) shade tree and ten (10) shrubs per 35 linear feet of street frontage shall be required.

<<<<FIGURE INCLUDED>>>>

3. A twenty-five (25') foot strip of undisturbed woodlands preserved between the parking area and right-of-way shall be permitted in lieu of the requirements set forth in Section 11.1030.A.1-2.

<<<<FIGURE INCLUDED>>>>

B. Perimeters Not Adjacent to a Public Rights-of-way:

In addition to section 11.1030.A, the remaining perimeter of any parking areas shall be surrounded by a continuous five (5') foot landscape border. Such landscape border shall be required between any paved area and any property line, yard, required yard, or structures. The landscape border may be interrupted for ingress and egress to structures and adjoining lots. The landscaped border between any paved area and any property line, yard, or required yard shall consist of one (1) shade tree or one (1) ornamental tree and ten shrubs for every 35 linear feet of perimeter. The border between any structure and parking area shall consist of ten (10) shrubs for every 35 linear feet of perimeter.

<<<<FIGURE INCLUDED>>>>

11.1035 Landscape Requirements for the Interior of Parking Areas

- A. The interior of parking area shall contain landscape islands and peninsulas located in such a manner as to:
 - 1. Divide and break up large expanses of paving.
 - 2. Guide traffic flow and direction.
 - 3. Promote pedestrian and vehicular safety.
 - 4. Preserve existing trees and vegetation.

- B. A maximum of twelve consecutive parking spaces in a row shall be permitted without a landscape island or peninsula.

- C. Each end of each row of parking spaces shall require a landscape island unless the end of such row of parking spaces is adjacent to a perimeter landscape screen as required in Sections [*sic*] 11.1030.

<<<<FIGURE INCLUDED>>>>

- D. The minimum width for a landscape island or peninsula that is parallel to a parking space shall be nineteen (19') feet. Each landscape island or peninsula shall contain a minimum of one (1) shade tree and five (5) shrubs.

<<<<FIGURE INCLUDED>>>>

- E. Every third group of rows of parking spaces shall be separated from one another by a six (6) foot landscape island that extends the length of the row of parking spaces. Such landscape island shall contain one (1) shade tree and ten (10) shrubs per 35 linear feet.

<<<<FIGURE INCLUDED>>>>

City of Goose Creek

1008.4.2 – DESIGN PRINCIPLES

The following are design principles for the landscape element:

d) Landscape design principles for specific activities:

Landscape for parking lot:

- I. Create shade cover over the majority of paved surface by the use of canopy trees. Tree canopies soften the visual impact of parking areas and relieve them from heat build-up;
- II. Use coarsely textured groundcovers which will serve as both shrubs and ground cover;
- III. Create minimal tree litter for ease of maintenance;
- IV. To provide a canopy, a planted island or break at least 5 feet wide with at least one (1) tree and two (2) shrubberies, or two (2) trees shall be installed for every ten (10) spaces of parking area.

City of Greer

6:9.11 Landscaping of Parking Area

Roadside Buffers

All new off-street parking lots regardless of size located adjacent to existing public right(s)-of-way shall establish roadside buffers. Roadside buffers shall be located outside of the rights-of-way of existing roads and shall be located outside the future rights-of-way of all GRATS, SPATS, and SIB.

- A. The minimum roadside buffer width shall have an average planting width of eight (8) feet with the minimum width for any buffer yard being (5) feet [sic]. Buffers shall contain the following plant materials:

An average of one (1) tree for every sixty (60) feet of linear road frontage. Trees shall be spaced so that there is a minimum of one (1) tree for every two hundred (200) linear feet of road frontage. Shrubs spaced to provide a continuous evergreen screen within three (3) years of installation.

...

Interior Plantings

In addition to all other landscaping requirements, all new off-street parking lots with sixty (60) or more spaces shall provide and maintain landscaped planting areas within the interior of, and adjacent to, the parking lot:

- A. Interior planting islands shall have a minimum planting area of eight (8) feet wide by eighteen (18) feet long.
- B. In addition to required trees and shrubs interior-planting areas shall be grassed or covered with mulch.
- C. All planting areas shall be protected from vehicular intrusion by the installation of curbing, wheel stops.
- D. Each landscaped planting area shall contain trees and shrubs at the rate listed below rounded upward to the next whole number:
- One (1) tree for every fifteen (15) spaces
 - One (1) shrub for every five (5) parking spaces
- E. Interior planting areas shall be designed within or adjacent to the parking area(s) as:
- Islands, located at the end of parking bays;
 - Islands, located between parallel rows of cars;
 - Driveway medians, a minimum of eight (8) feet in width;

- Intermediate islands; or
 - A combination of the above
- F. Trees and shrubs must be planted within twenty (20) feet of the parking area to satisfy the interior planting requirements.
- G. The design size and shape of the interior planting areas shall be at the discretion of the owner; however, no parking space shall be:
- Located farther than ninety (90) feet from the trunk of a shade tree;
 - Separated from a shade tree by a building or other structure.
- H. Parking structures are excluded from interior landscape areas.

Planting Material Specifications

- A. A minimum of 75% of trees planted to meet this requirement shall be large shade trees (unless precluded by utilities.)
- B. Large shade trees shall have a minimum planting size of two- (2) inches caliper.
- C. Small trees and multi-stem trees shall have a minimum planting height of six (6) feet tall.
- D. Evergreen shrubs shall have a minimum installed height of twelve (12) inches and a minimum height of thirty (30) inches within three (3) years of installation. All shrubs inside the site triangle points of ingress and egress shall not exceed thirty-six (36) inches in height.

Existing Trees

It is encouraged to use existing trees to meet the requirements of this section. If existing trees are preserved to meet the roadside buffer or interior planting requirements then a reduction in the new planting requirements will be given. Existing trees will be credited towards meeting the requirements of this section as follows:

One tree (2 – 6 inches diameter at breast height)	= 1 planted trees
One tree (6 – 10 inches diameter at breast height)	= 2 planted trees
One tree (10 - 15 inches diameter at breast height)	= 3 planted trees
One tree (15> inches diameter at breast height)	= 4 planted trees

Protection of Existing Trees

Any trees preserved on a development tract to receive credit shall meet the following protection standards. A root protection zone shall be established around all trees to be preserved. The root protection zone shall be clearly shown on all grading and site plans.

- A. Root Protection Zone – The land area around the base of a tree in which disturbances are prohibited in order to protect the roots of the trees and aid the tree’s survival. The root protection zone shall be equal to one (1) foot radius for every inch of tree diameter measured at a point four and one-half (4½) feet above ground. Root protection zone measurements shall be rounded off to the nearest foot.
- B. Protective Barrier – A protective barrier shall be installed at the start of grading, and be located at the outer edge of the root protection zone. Protective barriers shall be posted as a “Tree Save Area”. This procedure shall be incorporated as a note on the grading and erosion control plans. Protective barriers shall be constructed of a material resistant to degradation by sun, wind, and moisture and shall remain in place until all construction is complete.
- C. No storage of materials, dumping of waste materials, fill, or parking of equipment shall be allowed within the root protection zone and no trespassing shall be allowed within the boundary of the root protection zone. Utility easements and borings are permitted.

6:9.12 Landscaping for Preexisting Parking Lots

- A. *Purpose and intent of section.* The city recognizes the need to include minimum landscaping requirements for preexisting parking lots in this article. The city also recognizes that failing to bring nonconforming parking lots into conformance with this article not only jeopardizes the physical revitalization of the city, but also fails to equally provide the environmental benefits, [sic] associated with living trees, to all regions of the city. The practical effect of this section is to bring these preexisting areas into conformity with the regulations for the installation of trees and other plant materials for new development.
- B. *Preferred design standards.* Although not required by this section, the preferred design of buffers and/or other planting areas for preexisting parking lot areas would be to install the required minimum number of trees and other plant materials, spaced evenly, in a buffer between the

vehicular surface area and the public right-of-way. The plant materials used in the buffer yards should be designed to assure visibility and safety of pedestrians on the public street, as well as those within the parking lot.

C. *Application of section.* Any preexisting parking lot area to which an expansion or addition is made shall be landscaped to meet the buffer yard and interior planting requirements of this section.

D. *Landscape requirements.*

(1) In order to achieve the desired results of this section, the minimum number of off-street parking spaces, previously required by the City Code, may be reduced by a maximum of 25 percent. No reduction if the required number of parking spaces shall occur without the prior approval of the zoning administrator, who shall first determine if the proposed reductions would cause or increase on-street parking congestion.

(2) Expansions or additions to existing parking lots shall be subject to:

- a. Preexisting parking lots that occupy a corner lot, to which any expansions and/or additions are made and preexisting parking lots, to which expansions or additions of more than 25 percent are made, shall meet 100 percent of the buffer yard landscaping requirements for new development.
- b. All other preexisting parking lots, to which expansions or additions of 25 percent or less are made, shall be subject to 50 percent of the buffer yard landscaping requirements for new development.

(3) Landscaped planting areas.

- a. All preexisting parking lots shall be required to provide and maintain landscaped planting areas within the interior of, and/or adjacent to, all portions of the parking lot. Each landscaped planting area shall contain a minimum area adequate to accommodate the most growth of the plant material used.
- b. Existing planting areas containing a minimum of 112 square feet, and existing trees, with a minimum caliper of one inch measured at 4 ½ feet above grade, may be used to meet the requirements provided that should these existing trees become diseased, unhealthy, or die, they shall be replaced within one year with approved shade trees.

- c. All areas used for required buffer yards shall be located on the property. In unusual or extraordinary circumstances as determined by the zoning administrator, public property or public-right-of-way may be used to meet the requirements of this section, provided the property owner obtains permission from the city public works department and/or SCDOT. Maintenance remains the responsibility of the private property owner.
- (4) Interior planting areas shall be designed within or adjacent to the parking area as:
- a. Islands, located at the end of parking bays;
 - b. Islands, located between parallel rows of cars, used to visually separate parking areas;
 - c. Part of a continuous street yard planting;
 - d. Driveway medians, which shall have a minimum width of four feet for medians with shrubs, six feet for medians with shrubs and intermediate trees and nine feet for medians with major deciduous or evergreen trees;
 - e. Foundation plantings; or
 - f. A combination of the items set forth in subsection (4) a-e.
- (5) Each interior planting shall contain locally adapted trees and shrubs at the following scales:
- a. Trees shall be required at the minimum rate of one shade tree for every 4,000 square feet, or a portion thereof, of total preexisting parking lot.
 - b. Shrubs shall be required at the minimum rate of one shrub per 1,000 square feet, or a portion thereof, of total preexisting parking lot.
- (6) All planting areas shall be protected from vehicle damage by the installation of curbing, wheel stops, extra width in the buffer area or other method approved by the zoning administrator.
- (7) Shrubs in buffer yards shall be no less than 18 inches in height when installed and shall attain a minimum height of 30 inches, as

measured from either the adjacent right-of-way or the paved parking lot, whichever is higher in elevation. No more than 25 percent of the required shrubs may be deciduous.

- (8) Earthen berms may also be incorporated into the design of any required planting area. Any berm installed shall have a minimum side slope of no greater than two to one. Berms shall be planted with locally adapted species of shrubs, ground covers and/or other plant materials. However, shrubs planted on berms may have a lesser height, provided that the combined height of the berm and the plantings after three years is at least 30 inches high.

Town of Irmo

4-3.5. Landscaping requirements.

Required landscaping shall be provided as follows:

- (2) Within the interior, peninsula or island type landscaped areas shall be provided for any open vehicular use area containing 20 or more parking spaces. Landscaped areas shall be not less than 25 square feet and located in such a manner as to divide and break up the expanse of paving and at strategic points but not less than one tree per ten parking spaces, to guide travel flow and directions. Elsewhere, landscaped areas shall be designed to soften and complement the building site.

Town of James Island, see Charleston County

Town of Lexington

3-3.0 PARKING LOT PERIMETER

- (A) Street frontage and perimeter screening shall consist of evergreen plant material that is at least seventy-five (75) percent opaque. The mature height shall be not less than two (2) feet nor greater than five (5) feet.
- (B) Screening shall extend along the entire length of the surface parking lot street frontage and perimeter (sides and rear).
- (C) There shall be no horizontal gap in the street frontage or perimeter plane greater than six (6) feet wide.
- (D) Biodiversity must be employed in the use of landscape design elements.

3-4.0 SURFACE PARKING LOT INTERIOR

The interior of all surface parking lots shall be landscaped in accordance with the following required design elements:

- (A) Large broad leaved canopy trees shall be provided in each surface parking lot at a minimum average density of one tree for every eight (8) parking spaces or 1,440 square feet of impervious parking surface.
- (B) No off street parking space may be located more than fifty (50) feet from the trunk of a large canopy tree.
- (C) No tree may be planted closer than four (4) feet to the back of a curb, wheel stops or the paved portion of the parking lot.
- (D) Wheel stops, curbing or approved equal shall be provided for protection of all landscaped areas to prevent vehicular encroachment.
- (E) Large broad leaved canopy trees located in the interior (i.e. islands/medians) plantings shall have a minimum of three hundred twenty (320) square feet of pervious rooting area. The shape of the Island shall not allow the placement of the tree to violate (C) (i.e. Medians, Islands must be at least eight (8) feet wide).
- (F) Biodiversity must be employed in the use of landscape design elements.

Town of LincolNville

Chapter 11: Landscaping and Site Enhancement

III. Required Landscape Elements.

- C. *Buffering parking areas.* All parking areas on lots accommodating eight (8) or more vehicles shall install the following site enhancements.
1. Any such parking area fronting a public right of way or in direct view of such shall be bordered by a hedge of shrubs maturing to two feet (2'), min., and/or a garden wall or fence three to five feet (3'-5') in height to create an opaque buffer for the length of the parking area between such area and the right of way.
 2. Any such parking area outside the Town Center District paralleling property lines shall be bordered by a hedge of shrubs maturing to four feet (4'), min., in height to create an opaque buffer for the length of the parking area between such area and the property line.
 3. Trees shall be installed within the parking area and/or within twenty feet (20') of such, one (1) per twenty-five hundred square feet (2,500'²) of parking area and associated circulation provided, planting standards for which shall comply with Section IV.B.1.
 4. These requirements may be satisfied by the retention of natural vegetation adjacent to and within such parking areas.
 5. Such buffers may be interpreted by clearly defined driveways and walkways.

City of Myrtle Beach

910.3.2 *Vehicular use area perimeter requirement.* Unless regulated in other sections of this article, any vehicular use area that is within 30 feet of any property line shall require a minimum landscape buffer of five feet in width along the linear boundary of the vehicle use area. Where a shared curbcut and drive aisle have been approved, then the amount of landscaped area deleted from the required buffer shall be added on each property to the vehicular use interior landscaping requirements. When a vehicle use area is more than 30 feet from a property line, that area not covered by buildings must be covered by grass or other ground cover as approved by the community appearance board. Landscape requirements are specified in section 910.4. A vehicle use area is considered to be adjoined by any property or right-of-way unless the vehicular use area is entirely screened visually by an intervening building or structure. In such cases, walls and fences are not considered structures.

910.3.2.1 Those properties located in C-5 district that utilize the special regulations outlined in section 1219 for rear yard parking shall not be required to establish landscaping within vehicle use areas.

910.3.2.2 Those properties which have a width of less than 70 feet shall have a minimum landscape buffer of seven feet abutting a right of way. All parking stalls shall have wheel stops at a point 2.5 feet from the top end of the parking space. The 2.5-foot area shall be considered an exterior buffer area. Grass or other types of living ground cover shall be installed within these 2.5-foot wide buffer areas.

910.3.2.3 Those properties with loading zones and service areas, outside the front and side street setback, that are within 50 feet of a property line shall have at least a ten foot landscape buffer abutting the property line planted with materials as specified in 910.3.1.

910.3.3. *Vehicular use interior requirements.* Any open vehicular use area (excluding loading, unloading, and storage areas in the C-3, C-9, C-10 or C-11 zones) containing more than 4,000 square feet of area shall provide interior landscaping in addition to the required perimeter landscaping. Such landscape areas shall be located in such a manner as to divide and break the expanse of paving and be located at strategic points to guide travel flow and direction. Interior landscaping may be peninsular or island types.

910.3.3.1 Location standards for landscape areas

910.3.3.1.1. *Lots 70 feet in width or greater.* An area equal to five percent of the vehicle use area shall be dedicated to interior landscape areas. The minimum landscape area permitted shall be 100 square feet, with four feet minimum distance between all trees and paving at time of planting, measured at the base of the trunk of the newly planted tree. Vehicular use areas less than 30,000 square feet; the required landscape area will be no larger than 375 sq. ft. Vehicular use areas 30,000 sq. ft or larger; the required landscape area shall be no longer than 1500 square feet. Landscape materials shall be as specified in section 910.4.

910.3.3.1.2 *Lots less than 70 feet in width.* Lots with up to 100 feet of depth shall provide two interior landscaped islands. One additional interior landscaped island shall be required for every 25 feet of lot depth over 100 feet. The minimum dimension of these landscaped areas shall be at least 14 feet wide and 16.5 feet deep.

910.4 *Landscape material required.* All landscape material shall be of the variety and species that is known to grow and thrive in this area, artificial plants are not calculated for code compliance. Any material that is proposed which is normally not used in this area will not be approved unless the owner and designer present their documentation regarding the care and survivability of the questioned material to the zoning administrator who will forward the documentation to the community appearance board for approval. Unless specified elsewhere within the zoning ordinance, landscape material requirements are as follows:

910.4.1 *Perimeter shrubs.* All shrubs, except those located in site triangles, must be of a type that naturally attains a mature height of at least 30 inches. The amount of shrubs must be at least equal to one three-gallon shrub for every three linear feet of required buffer or one seven-gallon shrub for every six linear feet of required buffer. Shrubs may be grouped or clustered, but they must be planted in the same buffer for which they were calculated.

910.4.2 *Interior vehicular use area shrubs.* All shrubs must be of a type that naturally attains a mature height no greater than 24 inches unless the interior landscape area adjoins the perimeter buffer, then the shrubs may be of the type that reach a mature height of at least 30 inches. The amount of shrubs must be at least equal to eight three-gallon shrub or four seven gallon shrubs for every 150 sq. ft. of required interior vehicle use landscaped area. Shrubs must be located within the interior landscaped area for which they were calculated.

910.4.3 *Wax Myrtle/Myrica cerifera and Crape Myrtle/Lagerstromia indica shrubs.* Wax Myrtle/Myrica cerifera and Crape Myrtle/Lagerstromia indica shrubs may be used at a ratio of 1:2 for up to 50 percent of the required perimeter or interior shrubs.

910.4.4 *Trees associated with vehicular use areas.*

910.4.4.1 Within the front and side street setbacks there shall be sufficient trees within and around the vehicular use area to ensure any vehicle within this setback areas is always within 50 feet of a planted or retained tree within the front or side setbacks. Trees planted within the front and side street set back must be at least three inches in caliper at time of planting and an upper story species, Sabal Palmettos may be substituted at a 3:1 ratio for upper story trees

910.4.4.2 There shall be sufficient trees within and around the designated parking with maneuvering areas, outside the front and side street setbacks, to ensure any vehicle at any time shall always be within 75 feet from a tree trunk with two or more trees or 50 feet from a single tree trunk in a planing area.. A planting area shall consist of a maximum of 200 square feet of pervious material per tree or no more than 50 feet between trees within in the same planting area. Trees planted must be at least three inches in caliper for single stemmed trees or 12 to 14 feet in height for multi-stemmed trees. (Sabal Palmettos may be substituted at 3:1 ratio for upper story trees). Except for Japanese Black Pine trees, no more than 15% of the total required planting may consist of any species of pine trees.

910.4.4.3 Those properties which have a width of less than 70 feet shall have one four-inch caliper upper story tree in each interior island. A three-inch caliper single stem tree shall be in each seven-foot wide perimeter island, Sabal Palmettos may be substituted at 3:1 ratio in perimeter islands only.

910.4.4.4 Those properties which are located in C-9 or C-11 Zoning Districts which utilize vehicle use areas without designated parking, shall have a three inch caliper tree for every fifty linear feet of buffer. These trees will be spaced as equally as possible providing for various easements and utility encroachments

910.4.4.5 Any tree placed to meet the above coverage requirements shall be on the same property as the designated parking spaces it covers.

...

910.6.4 *Landscaping requirements for all other vehicular use areas.* In order to preserve a natural environment and mitigate the loss of trees within this district, a minimum of eight percent of the total vehicular use area not considered in 910.6.3 will be used as the basis for determining reforestation requirements. One tree for every 100 square feet of this area shall be planted in a way that furthers the purpose of the district, except that none of these trees shall be planted in designated wetlands or the required perimeter buffer. (e.g., 10,000 sq. ft. of driveway X 8% = 800 / 100 = 8 trees)

City of Newberry

7-4 Parking Lots

7-4A. The impervious surface of the parking area and access area shall be separated from the street right-of-way and property lines by a landscaped strip at least ten feet in width. Ingress and egress shall be provided through driveway openings only. In the event a parking lot is adjacent to a parking lot or driveway on another parcel, the required landscaped strip along the common property line between the two areas may be waived by the Planning & Zoning Department, or the Planning Commission, if it will result in less traffic congestion on adjoining street because of improved traffic circulation between the two parking lots or a reduction in the number of curb cuts.

7-4B. The parking lot shall be constructed so that spaces are grouped into bays. At the end of each bay for 8 or more cars, a landscaped island of at least nine feet in width and 15 feet in length shall be built to separate the bays from each other or from traffic lanes. When the parking bays contain double rows of parking spaces, the landscaped island shall be increased to nine feet in width and 30 feet in length. (Figure 7.11) A parking bay may not be constructed to a length of more than 180 feet without constructing a landscaped island. The Planning & Zoning Department may approve islands, which vary from 9' x 15' or 9' x 30' rectangles in order to provide desirable geometric design features such as rounded corners and angles to facilitate maneuvering of automobile traffic.

<<FIGURE HERE>>

7-4C. The landscaped areas within the parking lot shall not be less than 4% of the impervious surface area of the parking lot. The perimeter landscaped strip and street yards shall be excluded from the calculations of the minimum landscaped percentage.

7-4D. A minimum of one tree shall be provided within the landscaped areas in the parking lot for each 10 parking spaces in the lot. No trees identified as large maturing shall be planted within 20 feet of an electrical transmission or distribution line. Existing trees and natural vegetation shall be retained wherever possible, particularly where they border

adjacent property. All parking facing street frontage shall plant shrubs to screen the area (not to exceed three feet at mature height at entrances and sight distance triangles) or create berms. No gaps greater than five (5) feet are allowed in a screen. All applications for development review or zoning permits shall be accompanied by a landscaping plan.

City of North Augusta

3.j.2. General Standards: Persons wishing to develop commercial property within the Highway Corridor District shall comply with the standards as follows:

- i. When commercial uses abut residential uses, the following standards shall apply:
 2. Landscaping shall be provided surrounding buildings and parking areas at a minimum width of five (5) feet. The intensity of landscaping shall be at a minimum two plants per thirty (30) square feet of landscaped area. One-half of the vegetation shall be at least four (4) feet high and the other one-half shall be at least one (1) foot high at the time of planting. Trees shall be a minimum of ten (10) percent of the total plantings. If parking is provided in the front of the commercial development, it shall be effectively screened by earth berms or a landscaped area twenty-five (25) feet from R-O-W line. The Planning Commission may take into consideration the existence of available landscaping on site to vary from any of the requirements herein.

7.d.6. Parking Lot Landscaping:

- a. Amount Required: In parking lots, at least five (5) percent of the interior parking area shall be landscaped with plantings, and one (1) tree for each ten (10) spaces shall be installed. Parking lot street frontage screening shall be a minimum of five (5) feet wide. Planting required within the parking lot is exclusive of other trees planted along the street.
- b. Location: The landscaping should be located in protected areas, such as landscape islands, left islands, at the end of bays, or along walkways.
- c. Plant Type: A mixture of hardy flowering and/or decorative evergreen and deciduous trees may be planted. The

evergreens should be used along the perimeter of the lot for screening, and the deciduous trees for shade within the lot. The area between trees shall be mulched and planted with shrubs or ground cover. Any area that will be under the overhang of vehicles shall be mulched or covered with paving material.

- d. Maintenance: Plantings shall be watered regularly by means of an automated and timed irrigation system.

City of North Charleston

Section 6-14. Landscaping:

(f) *Landscaped areas:*

- (1) All landscaped areas in or adjacent to parking areas shall be protected from vehicular damage by a raised concrete curb or an equivalent barrier of six (6) inches in height. The barrier need not be continuous.
- (2) Landscaped areas must be at least twenty-five (25) square feet in size and a minimum of three feet wide to qualify.
- (3) Landscaped areas adjacent to parking spaces shall be landscaped so that no plant material greater than twelve (12) inches in height is located within two (2) feet of the curb or other protective barrier. (Plant material greater than twelve (12) inches in height would be damaged by the automobile bumper overhang or by doors swinging open over the landscaped areas).
- (4) Planting of canopy trees is required at a rate of one tree per ten (10) parking spaces.

Town of Ridgeland

Activity Minimum

Number of Parking Spaces

Warehousing E	1 per 1000 S.F. of gross floor area
Transport Service	1 per 2 employees
Truck Terminal	no minimum established
Undertaking	1 per 300 S.F. of gross floor area
Utilities	no minimum established
Vehicle Parking	not applicable
Vehicle Repair	1 per 250 S.F. of gross floor area
Vehicles Sales	1 per 250 S.F. of gross floor area
Vehicle Service L & E	1 per 500 S.F. of gross floor area
Veterinarian	1 per 300 S.F. of gross floor area
Zoos	no minimum established

22.21 Required Landscaping in Parking Areas

Accessory parking areas generated by the above table shall, for all activities other than Residential Single and Residential Duplex, be landscaped as prescribed below:

A planting strip of five (5) feet width, exclusive of curbing, shall be provided adjacent to the public right of way for parking areas with ten spaces or less abutting public streets. This strip shall be improved with the planting of grass, shrubs, flowers or other decorative material and at least one (1) tree 1 1/2 - 2 inches caliper or eight (8) to (10) feet in height measured from the top of the root ball to the tip of the crown.

Parking areas with eleven (11) or more spaces shall provide a perimeter planting strip of five (5) feet in width, exclusive of curbing, on all sides which are visually a part of the parking area. This strip shall be improved with the planting of grass, shrubs, flowers, or other decorative material at least one (1) with one (1) tree as described above for each fifty (50) linear feet or fraction thereof above 25 feet. Driveways shall be included in determining the linear length of the planting strip. In addition five (5)% of the interior space of a parking area shall be improved with the planting of grass, shrubs, flowers, or other decorative material. At least one (1) tree as described above shall be planted for each 100 square feet or fraction above 50 square feet of these interior planting areas. These areas may be adjacent to the perimeter strip, adjacent to buildings or within the parking area itself. Care must be taken to avoid creating traffic hazards by improper placement of planted area. Planted areas shall be defined by cast concrete curbing. All Curbing shall have rounded corners.

Activities requiring 11 or more parking spaces must submit a landscaping plan to the Planning Commission of the Town of Ridgeland for approval. A certificate of occupancy may not be issued unless the landscaping requirements have been met. If weather conditions prohibit the completion of landscaping a provisional certificate may be issued which will state a specific date by which such landscaping must be accomplished. This temporary certificate will be issued only after the property owner has presented a properly executed contract showing that the required landscaping will be completed on a specified date. Each day after the expiration date of the temporary certificate that landscaping remains incomplete, shall be a separate violation of the Zoning Ordinance.

Maintenance of the landscaped areas is the responsibility of the property owner. Trees, shrubs, grass, or flowers which die must be replaced.

City of Rock Hill

10-4 Parking Lots

- 10-4A. The impervious surface of the parking area and access area shall be separated from the street right-of-way and property lines by a landscaped strip at least ten feet in width. Ingress and egress shall be provided through driveway openings only. In the event a parking lot is adjacent to a parking lot or driveway on another parcel, the required landscaped strip along the common property line between the two areas may be waived by the Planning & Development Department or the Planning Commission during Group Development Review if it will result in less traffic congestion on adjoining streets because of improved traffic circulation between the two parking lots or a reduction in the number of curb cuts.
- 10-4B. The parking lot shall be constructed so that spaces are grouped into bays. At the end of each bay for 8 or more cars in a single row or 16 cars in a double row, a landscaped island of at least nine feet in width and 15 feet in length shall be built to separate the bays from each other or from traffic lanes. When the parking bays contain double rows of parking spaces, the landscaped island shall be increased to nine feet in width and 30 feet in length. A parking bay may not be constructed to a length of more than 180 feet without constructing a landscaped island. The Planning & Development Department may approve islands which vary from 9' x 15' or 9' x 30' rectangles in order to provide desirable geometric design features such as rounded corners and

angles to facilitate maneuvering of automobile traffic. To promote tree growth, backfill used in landscaped islands must be screened topsoil.

10-4C. The landscaped area within the parking lot shall not be less than 5% of the impervious surface area of the parking lot. The perimeter landscaped strip and street yards required shall be excluded from the calculations of the minimum landscaped percentage.

10-4D. A minimum of one tree shall be provided within the landscaped areas in the parking lot for each 10 parking spaces in the lot or 10% total coverage at maturity, whichever is greater. Existing trees and natural vegetation shall be retained wherever possible, particularly where they border adjacent property. All parking facing street frontage shall plant shrubs to screen the area (not to exceed three feet at mature height at entrances and sight distance triangles). No gaps greater than five (5) feet are allowed in a screen. All applications for development review or zoning permits shall be accompanied by a planting plan.

City of Seneca

SECTION 714 PARKING SPACE AREA REQUIREMENTS

714.6 Landscaping in Parking Lots. Any off-street parking area located within the front yard shall be buffered for the street by a landscaped strip as herein provided.

Landscaping shall be provided on the length of the parking area at a minimum of 5 feet wide measured from the road right-of-way. Such landscaped area shall consist of trees, shrubs, grass or other decorative or vegetative ground cover*. Required is one tree, minimum of a 2-inch caliper at planting, for every 50 feet of street frontage. Required for every five feet of street frontage is a shrub or bush. Placement in the landscaped area will be left up to the property owner's discretion with the Zoning Administrator's approval. No portion of this landscaped [sic] area shall contain bare soil. No impervious surface shall be allowed in this area except for driveways connecting the lot to the point of ingress and egress, sidewalks, boundary fences or walls. Nothing in this section shall be interpreted to require removal, grading or seeding of any natural [sic] area, existing trees, or vegetative matter. It shall be the responsibility of the Zoning Administrator to determine on a case-by-case basis whether or not the property owner must remove or supplement any existing natural areas, existing trees or vegetative matter.

In addition to the landscaping provided adjacent to the road right-of-way, any off-street parking area containing twenty or more off-street parking spaces and

located within a front or side yard shall be landscaped within the parking area as herein provided.

For each twenty off-street parking spaces located in a front or side yard, the following number of shrubs or trees shall be provided:

Shrubs: 10 or Trees: 2 (minimum of a 2" caliper at planting)

Such landscaped areas shall be separated from parking spaces, driveways and maneuvering areas by a curb at least six inches in height designed to minimize damage by vehicles to plants located in the landscaped area.

Town of St. George

4.1 Tree Protection

4.1.5 Criteria to Remove Protected and Landmark Trees

A. *Protected Trees*: No person shall remove, cut, or otherwise disturb any protected tree without first procuring a permit. Protected trees may be removed only for the following reasons.

7. Trees that prevent adequate space for on-site vehicular circulation and parking may be removed, provided, however, that such parking be located so as to minimize the loss of protected trees, that one (1) protected tree (min.) be conserved within the parking area per 2,500 square feet of such parking area, that trees not be removed to allow more than four (4) consecutive parking spaces (i.e.—every fifth space shall be reserved for trees, if present), that rows of parking not adjacent to the building face a median strip reserved for protected trees, and that all conserved trees be separated from vehicular travel surfaces by three feet (3'), min. Impervious parking surfaces are strongly discouraged within ten feet (10') of protected trees.

City of Sumter, see Sumter County

City of Tega Cay

Sec. 19-454. Shade trees in parking areas.

- (A) Vehicle accommodation areas that are required to be paved must be shaded by deciduous trees (either retained or planted by developer) that have or will have when fully mature a trunk at least 12 inches in diameter. When trees are planted by the developer to satisfy the requirements of this subsection, the developer shall choose trees that meet the minimum standards of section 19-403.
- (B) Generally no paving may be placed within 12.5 feet (measured from the center of the trunk) of any tree retained or planted to comply with subsection (A).
- (C) Vehicle accommodation areas shall be laid out and detailed to prevent vehicles from striking trees. Vehicles will be presumed to have a body overhang of three feet, six inches.

City of Travelers Rest

6:9.8 Landscaping of Parking Area

Roadside Buffers

All new off-street parking lots with ten (10) or more spaces located adjacent to existing public right(s)-of-way shall establish roadside buffers. Roadside buffers shall be located outside of the rights-of-way of existing roads and shall be located outside the future rights-of-way of all GRATS and SIB projects identified in the Transportation Corridor Preservation Ordinance of Greenville County.

- A. The minimum roadside buffer width shall have an average planting width of eight (8) with the minimum width for any buffer yard being five (5) feet. Buffers shall contain the following plant materials:
 - An average of one (1) tree for every sixty (60) feet of linear road frontage. Trees shall be spaced so that there is a minimum of one (1) tree for every two hundred (200) linear feet of road frontage.
 - Shrubs spaced to provide a continuous evergreen screen within three (3) years of installation.
- B. Within the buffer yard, fences, walls, earthen berms or any combination thereof may be used to meet the requirements of this section so long as they are a minimum of thirty (30) inches in height and provide a continuous opaque visual screen. Berms shall have a side slope no greater than 2:1.
- C. Where existing overhead power utility lines preclude sufficient space for a shade tree to grow then two (2) small trees shall be substituted for each required shade tree.

Interior Plantings

In addition to all other landscaping requirements, all new off-street parking lots with sixty (60) or more spaces shall provide and maintain landscaped planting areas within the interior of, and adjacent to, the parking lot.

- A. Interior planting islands shall have a minimum planting area of eight (8) feet wide by eighteen(18) feet long.
- B. In addition to the required trees and shrubs interior planting areas shall be grassed or covered with mulch.
- C. All planting areas shall be protected from vehicular intrusion by the installation of curbing, wheel stops.
- D. Each landscaped planting area shall contain trees and shrubs at the rates listed below rounded upward to the next whole number:
 - One (1) tree for every fifteen (15) spaces
 - One (1) shrub for every five (5) parking spaces
- E. Interior planting areas shall be designed within or adjacent to the parking area(s) as:
 - Islands, located at the end of parking bays;
 - Islands, located between parallel rows of cars;
 - Driveway medians, a minimum of eight (8) feet in width;
 - Intermediate islands; or
 - A combination of the above
- F. Trees and shrubs must be planted within twenty (20) feet of the parking area to satisfy the interior planting requirements.
- G. The design size and shape of the interior planting areas shall be at the discretion of the owner; however, no parking space shall be:
 - Located farther than ninety (90) feet from the trunk of a shade tree;
 - Separated from a shade tree by a building or other structure.
- H. Parking structures are excluded from interior landscape areas.

Planting Material Specifications

- A. A minimum of 75% of trees planted to meet this requirement shall be large shade trees (unless precluded by utilities.)
- B. Large shade trees shall have a minimum planting size of two (2) inches caliper.
- C. Small trees and multi-stem trees shall have a minimum planting height of six (6) feet tall.
- D. Evergreen shrubs shall have a minimum installed height of twelve (12) inches and a minimum height of thirty (30) inches within three (3) years of installation. All shrubs inside the site triangle at points of ingress and egress shall not exceed thirty-six (36) inches in height.

Existing Trees

It is encouraged to use existing trees to meet the requirements of this section. If existing trees are preserved to meet the roadside buffer or interior planting requirements then a reduction in the new planting requirements will be given. Existing trees will be credited towards meeting the requirements of this section as follows:

One tree (2 - 6 inches diameter at breast height)	= 1 planted trees
One tree (6 – 10 inches diameter at breast height)	= 2 planted trees
One tree (10 – 15 inches diameter at breast height)	= 3 planted trees
One tree (15> inches diameter at breast height)	= 4 planted trees

Protection of Existing Trees

Any trees preserved on a development tract to receive credit shall meet the following protection standards. A root protection zone shall be established around all trees to be preserved. The root protection zone shall be clearly shown on all grading and site plans.

- A. Root Protection Zone – The land area around the base of a tree in which disturbances are prohibited in order to protect the roots of the tree and aid the tree’s survival. The root protection zone shall be equal to one (1) foot radius for every inch of tree diameter measured at a point four and one-half (4½) feet above ground. Root protection zone measurements shall be rounded off to the nearest foot.
- B. Protective Barrier – A protective barrier shall be installed at the start of grading, and be located at the outer edge of the root protection zone. Protective barriers shall be posted as a “Tree Save Area”. This procedure shall be incorporated as a note on the grading and erosion control plans. Protective barriers shall be constructed of a material resistant to degradation by sun, wind, and moisture and shall remain in place until all construction is complete.
- C. No storage of materials, dumping of waste materials, fill, or parking of equipment shall be allowed within the root protection zone, and no trespassing shall be allowed within the boundary of the root protection zone. Utility easements and borings are permitted.

6:9.9 Exceptions

- A. Any lot used for the express purpose of sales and storage is exempt from the landscaping requirements.
- B. Parking Structures (multi-level)

6:9.10 Owner Responsibilities and Maintenance

The owner, his successors, or assigns, are responsible for maintaining all required plant material in good health. Any planted trees which die or become unhealthy and used to meet the provisions of this section must be replaced within one year with vegetation which conforms with the initial planting standards of section 6:9.8.

City of West Columbia

811.4.2 Design Requirements

- A. A parking lot design plan shall be included in the landscaping plan submitted to the Landscape Administrator as part of the review process.

811.4.4 Tree Requirements

- A. The use of large canopy trees is required throughout the parking area. In no case shall a parking space be greater than fifty (50) feet from the trunk of a tree. Trees shall be provided at a minimum average density of one (1) tree for every eight (8) parking spaces. No tree shall be planted closer than three and one-half (3 ½) feet from the back of a curb or the paved portion of the parking lot.
- B. Where overhead utilities exist or are planned, understory trees may be required instead of large canopy trees, at a replacement density of two (2) understory trees for each large canopy tree. Such substitution in the landscape plan shall be by written approval of the Landscape Administrator.

City of York

APPENDIX A: ZONING

SECTION XIII. LANDSCAPING REGULATIONS

F. *Parking lot interior landscaping requirements:*

1. For parking lots with 100 or more parking spaces, landscaped areas shall be installed as follows:

- a. At the end of each row of parking spaces, so that each row is separated from internal driveways (each landscaped area shall be a minimum of six feet wide).
- b. The number of continuous parking spaces in a row not interrupted by a landscaped area shall not average more than 12 feet over the entire parking lot and shall not be greater than 16 [feet] in any one place. Each landscaped area shall be a minimum of six feet wide by 20 feet long.
- c. A landscaped median shall be installed between adjacent rows of parking spaces as follows:
 - (1) At least 50 percent of the parking spaces shall have a median that is at least six feet wide, or
 - (2) At least 75 percent of the parking spaces shall have a median that is at least three feet wide.
- d. A minimum of one tree shall be planted per 120 square feet of landscaped area.
- e. Shrub coverage in the landscaped areas shall be at least 33 percent.
- f. Any one-site driveway leading to a parking area but not providing direct access to parking spaces within that parking area shall be separated from the parking area by a landscaped median with a minimum width of three feet and a minimum shrub coverage of 33 percent. All driveways shall be provided with landscaping that meets the approval of staff.
- g. At a minimum, five percent of the parking lot shall be landscaped and one tree for every ten parking spaces or fraction thereof shall be provided.
- h. All landscaping areas shall be planted directly in the ground; i.e., planting on top of paved or gravel surfaces is prohibited.
- i. Wheel stops or curbing shall be provided in all parking facilities to protect landscaped areas.
- j. No parking space shall be farther than 50 feet from the trunk of a tree.

2. For parking lots with fewer than 100 parking spaces, landscaping shall be provided as follows:

a. At a minimum, five percent of the parking lot shall be landscaped and one tree for every ten parking spaces or fraction thereof shall be provided.

b. All landscaping areas shall be planted directly in the ground; i.e., planting on top of paved or gravel surfaces is prohibited.

c. Wheel stops or curbing shall be provided in all parking facilities to protect landscaped areas.

d. No parking space shall be farther than 50 feet from the trunk of a tree.

e. At the site plan review stage, city staff and planning commission may require the inclusion of one or more elements contained in F.1.a. through F.1.f. [of this section XIII].

G. *Parking lot perimeter landscaping requirements:*

1. Shrubs planted a maximum of four feet on center shall be planted around the perimeter of the parking lot.

2. Properties having a street frontage in Gateway Corridor A shall provide trees a maximum of 30 feet on center along such street frontage. The exact location and species of such trees shall meet the approval of staff and the planning commission. Gateway Corridor A is delineated on the official zoning map.