

City of Macon

Bibb County

Macon MSA

2003 Population Estimate 95,267; -1.8% change from 2000 Census.

Tree City USA for 20 years.

Tree Commission with 12 members (7 voting); quarterly meetings required by ordinance.

Chapter 14 PARKS AND RECREATION

Article I. In General, Article II. Tree Preservation , Protection and Replacement.

First adopted 2001. No revisions.

Addresses public property.

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ALSO SUBMITTED—
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Macon-Bibb County, GA Canopy Cover Change
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Chapter 14

PARKS AND RECREATION*

Article I. In General

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ARTICLE I. IN GENERAL

Sec. 14-1. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Board of health means the Macon-Bibb County Board of Health.

Department means the department of parks and recreation.

***Charter reference**—Authority to construct and maintain parks, public grounds, recreational and sports areas and facilities, App. I(c).

Cross references—Department of parks and recreation established, § 2-476; Macon-Bibb County Recreation Advisory Commission, § 2-601; Macon Athletic Commission, § 2-626; cemeteries, Ch. 7.

State law reference—Authority to dedicate, set apart, acquire, or lease lands or buildings for recreation, O.C.G.A. § 36-64-2.

Director means the director of parks and recreation.

Secretary or chairman means the secretary or chairman of the health board.
(Code 1979, § 9-1009)

Cross reference—Definitions and rules of construction generally, § 1-2.

Sec. 14-2. Schedule of rates for use of golf courses required; location.

(a) A schedule of rates shall be established in the proper department regulations for the use and rental of any city golf courses.

(b) A copy of these rate schedules shall be kept on file and available to interested parties at the office of the city clerk as well as at the manager's office of each such facility.
(Code 1979, § 9-1004)

Sec. 14-3. Council to approve change in recreation areas; notice.

No park, playground or other recreation area, owned by the city, may be reduced in size, altered in any manner or diverted from its present use without the prior approval of city council given at a regular meeting. No action may be taken by the city council upon any request or proposal to reduce in size, alter or divert from its present use any such park, playground or other recreation area until notice of the request or proposal has been published once a week for two (2) consecutive weeks in the Macon Telegraph. The form and contents of the notice shall be that specified by the city council. The clerk of council shall be charged with the responsibility of causing the notice to be published and the cost of publication shall be borne by the city.

(Code 1979, § 9-1005)

Sec. 14-4. Driving, parking of motor vehicles in public parks.

In order to regulate the driving and parking of motor vehicles in the public parks of the city, it is hereby provided that it shall be unlawful for any person to drive or park any motor vehicle of any kind at any time in any public park of the city, except upon any streets, roadways and parking areas as may be constructed therein by the city for the driving and parking of motor vehicles.

(Code 1979, § 9-1006)

Sec. 14-5. Prohibited hours.

(a) It shall be unlawful for any person, other than authorized personnel of the city, to be present on any park or recreation facility in the city at any time from 12:00 midnight to 6:00 a.m.

(b) It shall be unlawful for any person, other than authorized personnel of the city, to be present on the premises of any public park in the city at any time from 12:00 midnight to 6:00 a.m.

(c) The prohibition stated above shall not apply to school playgrounds which are under the control of the county board of education or to any public park or playground in the city where activities are being conducted by or under the sponsorship of the Macon-Bibb County Recreation Department or to Central City Park during the period of the Georgia State Fair. (Code 1979, § 9-1007)

Secs. 14-6—14-25. Reserved.

ARTICLE II. TREE PRESERVATION, PROTECTION AND REPLACEMENT

Sec. 14-26. Purpose and intent.

(a) *Purpose.* It is the purpose of this article to promote and protect the public health, safety, the environment, and general welfare by providing for the regulation of the planting, maintenance, and removal of trees on city-owned property and public rights-of-way within the corporate limits of the City of Macon, and on city property outside the corporate limits.

(b) *Intent.* It is the intent of the Mayor and Council of the City of Macon that the terms of this article shall be construed so as to promote:

- (1) The planting, maintenance, restoration, and survival of desirable trees within the public rights-of-way and on city-owned property within the city; and
- (2) The protection of community residents from personal injury and property damage, and the protection of the City of Macon from property damage, caused or threatened by the improper planting, maintenance, or removal of trees located in the public rights-of-way and on city-owned property.
- (3) An increase in holding capacity of water in the land, the reduction of air pollutants and carbon monoxide levels in the air, the minimization of increased temperature on lands with tree cover, the aesthetic qualities of the community, the maintenance or increase of property values, the prevention of siltation of the rivers, canals, ditches, and other waterways, the aesthetic quality provided by the natural tree cover on tracts of land being converted to urban development, and the prevention of soil erosion.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-27. Jurisdiction.

The provisions of this article shall apply to all public rights-of-way, and city-owned property within the corporate limits of the City of Macon, and all city-owned property located in the county.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-28. Definitions.

As used within this article, the following terms shall have the meanings set forth in this section:

Arboricultural Specifications and Standards of Practice for the City of Macon (hereinafter, "Arboricultural Specifications Manual, or abbreviated as, ASM"). The ASM is a manual prepared by the City Forester pursuant to this article containing regulations and standards for the planting, maintenance, protection, and removal of trees upon the public rights-of-way and city-owned property.

Caliper. The diameter or thickness of the main stem of a young tree or sapling as measured at six (6) inches above the ground level. This measurement is used for nursery grown trees having a diameter of four (4) inches or less.

City forester. The agent of the City of Macon who is responsible for the administration of these standards and having the primary responsibilities of administration and enforcement of the City of Macon Tree Preservation, Protection, and Replacement Ordinance.

City-owned property. Property within the city limits of Macon or city-owned property located in the county, and

- (1) Owned by the city in fee simple absolute, or
- (2) Implied or expressly delegated or dedicated to the public for present or future use for purposes of vehicular or pedestrian traffic, or for public easements.

Clearing. The removal of woody vegetation of two (2) inches diameter or greater.

Diameter. The diameter or width of the main stem of a tree as measured four and one-half (4.5) feet above the natural grade at the base of a tree. Whenever a branch, split in the main trunk, limb, defect or abnormal swelling of the trunk occurs at this height, the diameter shall be measured at the nearest point above or below four and one-half (4.5) feet at which a normal diameter occurs.

Drip line. A vertical line extending from the outer surface of a tree's branch tips down to the ground.

Imminent danger. An appearance of threatened and impending injury or loss of property as would put a reasonable and prudent man to his instant defense.

Person. Any person, firm, partnership, association, corporation, company, or organization of any kind, including public utilities and governmental entities.

Protective barrier. The minimum tree protection device shall be as described in the ASM.

Property owner. The record owner or contract purchaser of any parcel of land.

Responsible person. The person who removes a tree from city-owned property or a public right-of-way which must be replaced and maintained pursuant to section 14-31 of this article.

Tree. Any self-supporting woody perennial plant which has a trunk diameter of two (2) inches or more when measured at a point six (6) inches above the ground level and which normally attains an overall height of at least ten (10) feet at maturity, usually with one (1) main stem or trunk, but may have multiple trunks at the base, and many branches which contains lignin (wood) in the stems and limbs.

Specimen tree. A tree which has been determined by the city forester to be of high value because of its type, size, age or other professional criteria, and has been so designated in the official records of the city.

Tree protection zone. The area surrounding a preserved or planted tree that is essential to that tree's health and survival, protected within the guidelines of this article, and is regulated and illustrated by the ASM.

Tree commission. The entity created and described in section 14-28 of this Article.
(Ord. No. O-01-0032, 6-21-01)

Sec. 14-29. Tree commission; establishment; composition; appointment of members; duties.

(a) *The establishment, composition, and appointment of members.* There shall be created a commission to be known and designated as the "tree commission" composed of twelve (12) people. Seven (7) of said members shall be appointed by the mayor with the confirmation of the council. Of the seven (7) members appointed by the mayor, one (1) shall be a representative of any of the historic districts of Macon, three (3) shall be citizens-at-large, one (1) shall be a contractor or developer, and two shall be persons professionally trained in field(s) such as urban forestry/arboriculture, botany, horticulture, or landscape architecture. The eighth member shall be the director of the department of parks and recreation, or his designee, who shall be an ex-officio member; the ninth member shall be the city forester who shall be an ex-officio member; the tenth member shall be a member of the Georgia Forestry Commission, or a designee, who shall be an ex-officio member; the eleventh member shall be the Director of the Keep Macon-Bibb Beautiful Commission, or a designee, who shall be an ex-officio member; and the twelfth member shall be a representative of the Georgia Power Company who shall be an ex-officio member. No ex-officio member shall have the right to vote on commission matters. All members of the commission shall serve without pay. The seven members appointed by the mayor shall be appointed as follows: two (2) for two (2) years; two (2) for three (3) years; and three (3) for four (4) years, and shall serve until their successors are duly appointed and confirmed by the council. Successors to those members appointed by the mayor shall, thereafter be appointed for terms of four (4) years. Vacancies caused by death, resignation, or otherwise, shall be filled for the unexpired term in the same manner as original appointments are made. The mayor may recommend removal and replacement of a member of the commission for nonperformance of duty. Nonperformance of duty is defined herein to mean three consecutive unexcused absences from commission meetings.

- (b) *Duties of the tree commission.* The duties of said "tree commission" shall be as follows:
- (1) To study the problems and determine the needs of the municipality in connection with its tree planting, maintenance and removal programs and the urban forestry management plan.
 - (2) The tree commission shall provide consultation and assistance to the city forester on any matter pertaining to the "CITY OF MACON TREE PRESERVATION, PROTECTION, AND REPLACEMENT ORDINANCE" and its enforcement. The topics under which this advice and consultation may be given may include, but are not limited to, any of the following:
 - a. amendments to the CITY OF MACON TREE PRESERVATION, PROTECTION, AND REPLACEMENT ORDINANCE, and alterations or revisions to the ASM and alterations or revisions of the urban forestry management plan;
 - b. policy concerning selection, planting, maintenance, and removal of trees within the city, on city-owned property or public rights-of-way;
 - c. establishment of educational and informational programs to encourage proper maintenance of trees.
 - (3) The tree commission, upon receipt of a written appeal from any person who disagrees with a decision of the city forester shall hear all issues of the disputes which arise between the city forester and any such person whenever those issues involve matters of the interpretation or enforcement of the ASM, the urban forestry management plan, or of the interpretation or enforcement of this article. The decision of a majority of the appointed members of the tree commission with regard to such dispute shall be final. Any person who disagrees with the decision of the tree commission may appeal said decision to municipal court as set forth in section 14-37.
 - (4) To assist the Administration of the City of Macon, as well as city council members and citizens of the city, in the dissemination of news and information regarding the protection, maintenance, removal and planting of trees on city-owned property or public rights-of-way, and to make such recommendations from time to time to the mayor and council as to desirable legislation concerning the tree program and activities for the City of Macon.
 - (5) To provide at least quarterly meetings and special meetings at which the subject of trees may be discussed by a quorum of the members of the commission, officers, and personnel of the city, and all other persons interested in the tree program.
 - (6) That within a reasonable time after the appointment of said commission and the approval of the members thereof, upon call of the mayor, said commission shall meet and organize by the election of a chairperson and the appointment of a secretary. The said commission shall then provide for the adoption of rules and procedures and for the holding of regular and special meetings as said commission shall deem advisable and necessary in order to perform the duties set forth.

- (7) To assist the planning and zoning commission in the enforcement of regulations and procedures adopted by the P&Z commission for the purpose of regulating trees on private property. The provisions of this article shall not be binding on or affect the commission's regulations and procedures.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-30. City forester; duties; authority.

(a) *Duties.*

- (1) The city forester is hereby charged with the duty to enforce this code section.
- (2) The city forester, with the assistance of the tree commission, shall develop, and each subsequent year, update, the urban forestry management plan. The plan shall outline the urban forestry program activities for a minimum of the next five (5) years. This plan shall describe the urban forestry activities to be undertaken by the city, the reasons for those activities, the possible funding source(s), the means of accomplishing the activities, the alternatives available to the city to fund or accomplish the activities, the projected date of completion, and the impact if the activities are not completed. Activities may include but are not limited to street tree inventory, planting, tree removal, personnel training, beautification projects, and educational projects.
- (3) The city forester, with the assistance of the tree commission, shall develop and periodically review and revise, as necessary, the ASM. This manual shall contain regulations and standards for the planting, maintenance, tree protection zones, and removal of trees upon city-owned property, and the public rights-of-way.
- (4) The city forester shall cause the urban forestry management plan and the ASM, and all revisions and amendment to it, to be published and promulgated and shall cause one (1) copy of the ASM, and all revisions and amendments to it, to be available for public inspection at the office of the city clerk. Notice that such information is available for public inspection shall be published in a newspaper of general circulation within Bibb County at least one (1) weekday of each of four (4) consecutive weeks immediately following the initial availability of the ASM, or revisions or amendments thereto. The ASM, and any revisions and amendments thereto, shall become effective upon approval by the mayor and city council. The ASM, once passed by council, becomes effective upon the mayor signing the same. Copies shall also be made available to the Macon-Bibb County Planning and Zoning Commission and Engineering Department of the City of Macon.
- (5) The city forester shall maintain on file in the office of the city clerk for any interested persons, copies of the tree ordinance, information about the activities of the tree commission, copies of the ASM, and copies of the urban forestry management plan.
- (6) The city forester shall administer the urban forestry management plan, the City of Macon Tree Preservation, Protection, and Replacement Ordinance, and the provisions of the ASM.

- (7) The city forester shall perform whatever acts are necessary, including the planting and maintenance of trees and the removal of undesirable trees located on public rights-of-way or city-owned property to conform to the urban forestry management plan, the ASM, and this article. Pursuant to this duty, the city forester, in accordance with normal city procedures regarding contracts, may arrange contractual agreements.
- (8) The city forester shall review and issue a written decision on all requests for tree removal as are required by this article. The forester shall obtain, as a condition precedent to the issuance of an approval, the written agreement of each person who applies that he or she will comply with the requirements of this article, the urban forestry management plan, and the tree replacement requirements. The forester shall have the right to inspect all work performed in public rights-of-way or city-owned property.
- (9) The city forester shall establish a program of public information and education that will encourage the planting, maintenance, protection, or removal of trees on private property in furtherance of the goals of the urban forestry management plan.
- (10) The city forester shall assist the Macon-Bibb County Planning and Zoning Commission on any actions affecting the planting, maintenance, protection, or removal of trees in the city under the commission's jurisdiction.
- (11) No person shall unreasonably hinder, prevent, delay, or interfere with the city forester or his agents while engaged in the execution or enforcement of this article.

(b) *Jurisdiction.* The city forester shall have the authority to regulate the protection, maintenance, removal and planting of trees on streets, parks, public places and other tree protection zones, on public rights-of-way and city-owned property within the city limits or on any city-owned property outside the city limits. Such authority shall include the assurance that this article is enforced and the issuance of citations for the violation of these provisions. (Ord. No. O-01-0032, 6-21-01)

Sec. 14-31. General protection and regulation of trees on city-owned property and public rights-of-way.

(a) Prior to any land disturbing activity within the tree protection zone, as defined in section 14-27(n), a person who owns property adjacent to city-owned property or the public rights-of-way shall obtain approval of the city forester. The property owner shall consult with and obtain approval from the city forester prior to removing, transporting, destroying, breaking, cutting, spraying, defacing, or otherwise disturbing any tree located on adjacent city-owned property or in the tree protection zone. The city forester shall respond to such request as expeditiously as possible, but in any event within sixty (60) days. If the city forester has not responded within sixty (60) days, the city forester will be presumed to have approved such request, unless otherwise informed. The property owner shall not allow any gaseous, liquid, chemical or solid substance which is harmful to trees to come into contact with, set fire to, or burn any tree on the adjacent city-owned property or any adjacent public rights-of-way.

(b) Any person who removes a tree or trees from city-owned property or any public right-of-way(s), whether approved by request or unlawful, shall mitigate the tree removal with the replacement of a tree or trees of equal value and of at least two-inch caliper. The aggregate or combined caliper inches of replacement trees shall equal the total diameter inches (dbh) of the tree(s) removed.

(c) No person shall directly or indirectly place stone, cement, or any substance in or about the tree(s) growing in public rights-of-way or on city-owned property which will impede the free entrance of water or air to the root system of such trees without consulting and obtaining approval from the city forester.

(d) No person shall attach or place any rope, wire, sign, poster, handbill, or any other thing on any tree or woody shrub growing in the public right-of-way or on city-owned property without consulting and obtaining approval from the city forester.

(e) This section shall not be interpreted to prohibit the removal, as determined by the City Forester, of:

- (1) dead, dying, diseased, insect infested or hazardous trees
- (2) undesirable species
- (3) the necessary minimal amount of trees and limbs by survey parties.

(f) This section shall not be interpreted to prohibit the city, utility companies (such as gas, electricity, cable, and telephone) and such other service providers from constructing and maintaining easements, safe clearances and/or rights-of-way for utility lines. All utilities and service providers shall notify the city forester in writing of any land-disturbing activity affecting trees covered by this article prior to conducting such activity, except in cases of an emergency. All companies, suppliers and/or agencies removing trees shall execute an agreement recognizing the need to minimize the cutting, trimming or removal of trees which do not frustrate or substantially interfere with the supply of service.

(g) The city forester's permission must be obtained prior to planting any trees in public rights-of-way or on any city-owned property. Certain types of trees are inappropriate for planting along public rights-of-way. Trees placed on such property without the permission of the city forester shall be subject to removal at the expense of the person who planted such trees.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-32. Tree replacement requirements.

(a) Street rights-of-way trees that are in sound condition but are to be removed to facilitate construction of driveways, utilities, curbs, sidewalks, or street widening must be replaced using the caliper and/or diameter as the replacement factor as specified in the ASM. Upon the removal of each tree, whether approved by request or unlawful, this article requires mitigation for trees removed with replacement trees of equal value and at least two-inch caliper. The aggregate or combined caliper inches of replacement trees shall equal the total diameter

inches (dbh) of the tree(s) removed. Where the city forester can not determine the dbh because of prior removal of a tree, the city forester shall determine the dbh in accordance with the latest revision of "Estimating DBH from stump diameter for 15 Southern Species" as published by the U.S. Forestry Service. Where the species removed is not included in the above publication, the city forester shall select a species closest to the type removed.

(b) Any person responsible for replacing removed tree(s) shall also be responsible for maintaining the health of all replacement trees for a period of one (1) year from the date of planting. The person shall replace any tree that dies during this time period.

(c) Any person who violates the tree replacement requirements or who fails to comply shall be charged the cost of replacement of said tree or at least five hundred dollars (\$500.00), whichever is greater. The replacement value of trees shall be determined in accordance with the latest revision of "Guide for Plant Appraisal" as published by the International Society of Arboriculture.

(d) Replacement tree species and number shall be determined by the city forester. Replacement shall be reasonably confined to the area from which the city's tree was removed. Acceptable replacement could include planting on public rights-of-way, city-owned property within the city, or private property with the approval of the city forester.

(e) Where the city forester has determined that irreparable damage has occurred to tree(s) on public rights-of-way, on city owned property or within a tree protection zone, the tree(s) must be removed and replaced by the responsible person(s) in accordance with the tree replacement requirements.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-33. Public nuisances.

(a) The following are hereby declared public nuisances under this article: any tree or portion thereof whether located on city-owned property, public rights-of-way or on private property which:

- (1) by reason of location or condition constitutes an imminent danger to the health, safety, or welfare of the general public;
- (2) obstructs the free passage of pedestrian or vehicular traffic or which obstructs a street light or street sign;
- (3) dangerously obstructs the view of motorists as such may be determined by the city traffic engineer pursuant to this article.

(b) Right to inspect. The city forester shall have the authority to enter onto private property whereon there is located a tree or portions thereof, that is reasonably suspected to pose an imminent danger or a public nuisance.

(c) Abatement. All nuisances described within this article shall be abated pursuant to Chapter 12 of this Code. When a dead or diseased tree which is alleged to constitute a nuisance is brought to the attention of the city forester, the forester, in his or her discretion, may submit

a written opinion to the director of the economic and community development department or the director the department of inspection and fees, whichever department has appropriate code enforcement jurisdiction over the property upon which such nuisance is located. Upon receiving a written opinion from the city forester that any tree or part thereof is a nuisance, the director, or his designee, shall commence nuisance abatement proceedings pursuant to Chapter 12 of this Code. In such cases where danger to the public is imminent, the director shall have the right, but not the obligation, to enter the property and abate the nuisance. (Ord. No. O-01-0032, 6-21-01)

Sec. 14-34. Notice, violation and civil penalty.

(a) If any person violates this article or fails to comply with any provision of this article, the city forester, or his designee, shall notify the person of the violation in writing. Said notice shall be delivered in person or by certified mail. The notice shall set forth the actions to be taken to correct the violation within fifteen (15) days. Failure of any person to correct the violation shall constitute an offense of this code. The city forester may grant a written extension not to exceed sixty (60) days. Any person who disagrees with the finding of the city forester may, prior to the expiration of the fifteen (15) period, or any extension, file a written appeal with the tree commission. An appeal shall be considered filed if delivered in person or certified mail to the tree commission.

(b) If the person notified fails to correct the violation or file an appeal with the tree commission within the allowable time period, the city forester shall issue a summons so charging the person notified and requiring such person to appear in municipal court for a hearing at a given time, place and date. Said summons shall be in the form of a written complaint setting forth the violation and the identity of the person complained against. Said summons shall be delivered in person or by certified mail.

(c) If the court determines that the person summoned did violate this ordinance, the court shall order mitigation as prescribed by (d) of this section. In addition to mitigation, the court may impose a fine not to exceed five hundred dollars (\$500.00) for each violation of the article. Each day during which any violation of the provisions of this article shall occur or continue shall be a separate violation.

(d) If, as the result of the violation of any provision of this article, the injury, mutilation, or death of a tree located on city-owned property or public rights-of-way is caused, the cost of repair or replacement of such tree shall be borne by the party in violation. The replacement value of trees and shrubs shall be determined in accordance with the tree replacement requirements.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-35. Emergencies.

In case of official emergencies, such as windstorms, ice storms, or other disasters, the requirements of this division shall be waived so that the requirements of this article would in no way hinder private or public work to restore order in the city. This work shall follow maintenance standards as outlined by the city forester.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-36. Moving large objects.

No person shall move any building or other large object which may injure trees or parts thereof in public rights-of-way or on city-owned property, without first having obtained the approval of the city forester.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-37. Appeals.

An appeal of a decision of the tree commission shall be taken to the municipal court. The municipal court, upon receipt of an appeal, shall have the authority and duty to consider and act upon the application.

(Ord. No. O-01-0032, 6-21-01)

Sec. 14-38. Legality of article and parts thereof.

Should any section, clause, or provisions of this article be declared by the courts to be invalid, the same shall not affect the validity of the article as a whole, or parts thereof, other than the part so declared to be invalid.

(Ord. No. O-01-0032, 6-21-01)

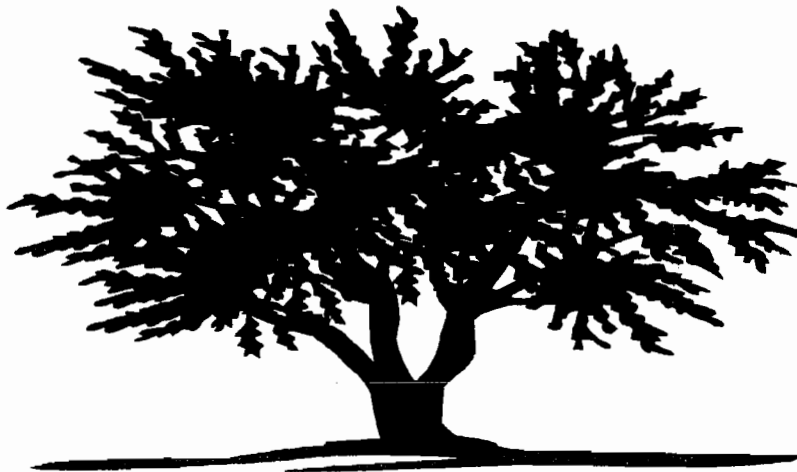
Sec. 14-39. Effective date.

This article is hereby declared to be of immediate necessity for the preservation of public peace, health, and safety, and shall be in full force and effective ninety (90) days from and after its passage and publication as provided by the law and this article.

All ordinances, including the beautification tree committee ordinance, adopted November 12, 1987, or parts of other ordinances in conflict herewith are hereby repealed.

(Ord. No. O-01-0032, 6-21-01)

**ARBORICULTURAL
SPECIFICATIONS
MANUAL**



CITY OF MACON, GEORGIA



April 11, 2003

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INTRODUCTION

Pursuant to the city of Macon Ordinance No. O-01-0032, adopted June 21, 2001, the Arboricultural Specifications Manual (ASM) is developed to regulate and establish standards for tree planting, maintenance, protection and removal. The City of Macon tree ordinance pertains to trees located on public property and rights-of-way within the city limits of Macon, Georgia. The ASM is a manual to be used in tree management to maintain tree, forest, environmental and community health.

Benefits

Trees provide many benefits to our community:

1. **Environmental Benefits.** Trees alter the environment in which we live by moderating climate, improving air quality, conserving water and harboring wildlife.
2. **Community Benefits.** Proper selection and planning allows trees to enhance and function on one property without infringing upon the rights and privileges of neighbors. Trees provide privacy, emphasize views or screen out objectionable views. They reduce glare and reflection while directing pedestrian traffic. Trees also soften hardscapes and compliment or enhance architecture.
3. **Economic Benefits.** Individual trees and shrubs have value, but the variability of species, size, condition and function makes determining their economic value quite difficult. The economic benefits of trees can be both direct and indirect.

Direct benefits are usually associated with energy costs. Air conditioning costs are lower in a tree shaded home or commercial building. Heating costs are reduced due to the formation of a windbreak.

The indirect economic benefits associated with trees are even greater. Lowered electricity bills are paid by customers when power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces and need fewer measures to control air pollution. Communities may also save if fewer facilities must be built to control storm water in a region.

SECTION 1. STANDARDS FOR TREE ESTABLISHMENT

New trees should be planted regularly – to replace trees that are removed, to add to an existing group of trees and to insure that our community forest remains diverse, dynamic and stable.

Selection

The question most frequently asked of tree professionals is “*What tree should I plant?*” Tree selection is one of the most important decisions in new tree establishment.

Considering most trees outlive people who plant them, the impact of this decision is one that can influence a lifetime. Match the tree to the site and both lives will benefit.

Standards

1. Match the tree growth requirements with soil and environmental conditions on the site using the provided ASM species list.
2. Select a tree of appropriate size (at maturity) for the site.
3. Select native tree species for planting if they are available and where they match the site conditions, instead of non-native species.
4. Use proven, non-native species if necessary.
5. Select only good quality planting stock, trees with a good quality root system, straight trunk without wounds, a single, central leader (no “forked” stems), and a full, well balanced crown.
6. Protect trees from wind damage during transport by covering with a tarp or landscape fabric.

Site Selection

Standards

1. Place trees where they have plenty of room to grow to maturity without their health or form being compromised by conflicts with infrastructure.
2. Provide trees with an adequate amount of soil volume for tree growth and stability.
3. Make sure there is now and will be at tree maturity adequate clearance from overhead utility lines, pedestrian and vehicular traffic, buildings, signs and streetlights.
4. Plant at least 10 feet from an underground utility line.
5. Plant only small maturing trees within 10 feet of an overhead utility line.

Site Preparation

Standards

1. Always call the Utilities Protection Center at 1-(800)-282-7411 for utility locations before you dig to install trees.
2. Till, harrow, or break up compacted soils in an area 5 to 10 times the width of the new tree's root ball or container.
3. Dig a planting hole that is at least 2 times and as much as 5 times the width of the new tree's root ball or container.
4. Dig the planting hole no deeper than the height of the new tree's root ball.
5. Do not add soil amendments such as peat moss or fertilizer to the planting hole.

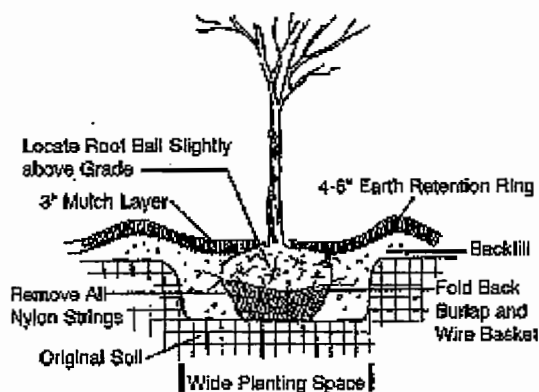
When to Plant

The ideal time to plant trees is during the dormant season – fall after leaf drop or early spring before bud-break. Cooler temperatures during this time allow trees to establish better root systems. However, trees properly cared for in the nursery garden center, and given the appropriate care during transport to prevent damage, can be planted throughout the growing season. Be sure to contact the Utilities Protection Center (1-800-282-7411) before planting.

New Tree Planting

Dig a shallow, broad planting hole (Figure 1). *"It is better to put a \$100 tree in a \$200 hole than to put a \$200 tree in a \$100 hole."*

Figure 1.



Standards

1. Dig a shallow, broad planting hole. Make the hole wide, as much as three times the diameter of the root ball, but only as deep as the root ball. It is important to make the hole wide to allow for proper root development.
2. Identify the trunk flare.
3. Place the tree at the proper height.
4. Straighten the tree in the hole.
5. Fill the hole, gently but firmly, as it is essential to remove all air pockets.
6. Stake the tree, if necessary.
7. Mulch the base of the tree.

New Tree Maintenance

Tree maintenance is routine care given to a tree throughout its life cycle to preserve or improve its health, function, and safety. The amount of maintenance a tree requires depends on the species, the tree's location in the landscape, its age, and the care (or abuse) it's been given. Basic tree maintenance begins with regular inspections to determine a tree's needs which may include pruning, mulching, fertilization, irrigation, and pest management.

Standards

1. New trees should be watered once a week throughout the entire first growing season, barring rain, and more frequently during hot weather.
2. Apply a mulch layer 2 to 4 inches deep in a circle around the base.
3. Corrective pruning after first growing season.

SECTION 2. STANDARDS FOR MAINTENANCE

Tree Pruning

Pruning is the most common maintenance procedure. Although forest trees grow quite well with only nature's pruning, landscape trees require a higher level of care to maintain their safety and aesthetics. Pruning should be done with an understanding of how the tree responds to each cut. Improper pruning can cause damage that will last for the life of the tree, or worse, shorten the tree's life.

Since each cut has the potential to change the growth of the tree, no branch should be removed without a reason. Common reasons for pruning are to remove dead branches, to remove crowded or rubbing limbs, and to eliminate hazards. Trees may also be pruned to increase light and air penetration at the inside of the tree's crown or to the landscape below. In most cases, mature trees are pruned as a corrective or preventative measure. Use the 3 cut method to remove a large limb (Figure 2).

Figure 2.



Use the 3-cut method to remove a large limb.

Standards

1. Pruning of weak, diseased limbs can be accomplished at any time.
2. Growth is maximized and wound closure is fastest if pruning takes place before spring growth flush.
3. Make proper pruning cuts. Use the 3-cut method to remove a large limb. If a large limb is removed, its weight should first be reduced. This is done by making an undercut above 12-18 inches from the limb's point of attachment. A second cut is made from the top directly above or a few inches further out on a limb. This removes the limb leaving the 12-18 inch stub. The stub is removed by cutting back to the branch collar. This technique reduces the possibility of tearing the bark.
4. The amount of live tissue that should be removed depends on the tree size, species, and age, as well as the pruning objectives. *Younger trees will tolerate the removal of a higher percentage of living tissue than mature trees.*
5. Mature trees should require little pruning.
6. Never remove more than one-fourth of a tree's leaf bearing crown.

Tree Mulching

Mulches are materials placed over the soil surface to maintain moisture and improve soil conditions. Mulching is one of the most beneficial things for the health of a tree. Mulch can reduce water loss from the soil, minimize weed competition, and improve soil structure. Properly applied, mulch can give landscapes a handsome, well-groomed appearance. Mulch must be applied properly; if it is too deep, or if the wrong material is used, it actually can cause significant harm to trees and other landscape plants (Figure 3).

Figure 3.



Standards

1. Use organic materials such as pine straw, leaves, aged wood chips and compost; avoid grass clippings, plastic, and rocks.
2. For newly planted trees, mulch an area at least three feet around the tree for two years.
3. For established trees, mulch out to the drip line or as far out as practical.
4. Spread mulch in an even layer, 3-4 inches deep, avoid mulching around the tree trunk.
5. Keep mulch at least 5 inches from the tree trunk to avoid creating favorable habitats for pests.
6. Mulch twice per year, in the later spring and in fall during leaf fall.
7. Use a tree's own leaves for mulch.
8. Avoid using string weed trimmers around the base of trees to remove weeds within mulch beds; hand pull weeds or use a contact herbicide to kill weeds.

Tree Fertilization

Fertilization is the application of nutrients to the soil or plant leaves to enhance growth. It should only be done for a specific purpose or to correct a specific deficiency discovered through soil testing or foliar analysis.

The benefits of fertilization include:

- Healthier, more extensive root systems
- Increased growth and larger trees at an earlier age
- Healthier trees in better condition to defend against pests

To enhance tree growth through fertilization, avoid these common mistakes:

- Fertilization without knowledge of nutrient availability and deficiencies
- Over fertilization, either too much at one time, or too often
- Use of weed and feed fertilizers beneath trees.

SECTION 3. STANDARDS FOR TREE PROTECTION

It is possible to preserve trees on building sites if the right measures are taken. **The most important step is to contact and include the City Forester during the planning stage.** The City Forester can help decide which trees can be saved, and can work with the contractor to protect the trees throughout each construction phase.

Tree protection is any activity designed to preserve tree health by avoiding damage to tree roots, trunk or crown. All trees should be protected throughout their lives from damage to maximize their health, useful life, function, and benefits. Small, newly planted trees need as much protection as large, mature trees. Tree protection can be passive or active.

Passive tree protection involves simply avoiding any disturbance or harmful activity near the tree. Active tree protection is required during land development, building construction and maintenance, infrastructure installation and maintenance and other landscape changes that will have a major impact upon trees.

Some benefits of protecting trees in new and existing developments are:

- Reduced long-term tree maintenance and replacement costs
- Reduced site preparation and grading costs
- Larger trees and greater canopy cover providing instantaneous benefits
- Positive feedback from neighbors and good public relations
- More diverse native plants and animals; most native trees are not available at nurseries and are difficult to re-establish

To protect trees, avoid these common mistakes:

- No one knowledgeable about trees is involved in planning and protection processes
- Tree conservation and protection are not considered in development planning
- Tree protection and 'preservation' measures are attempted only after damage has occurred.

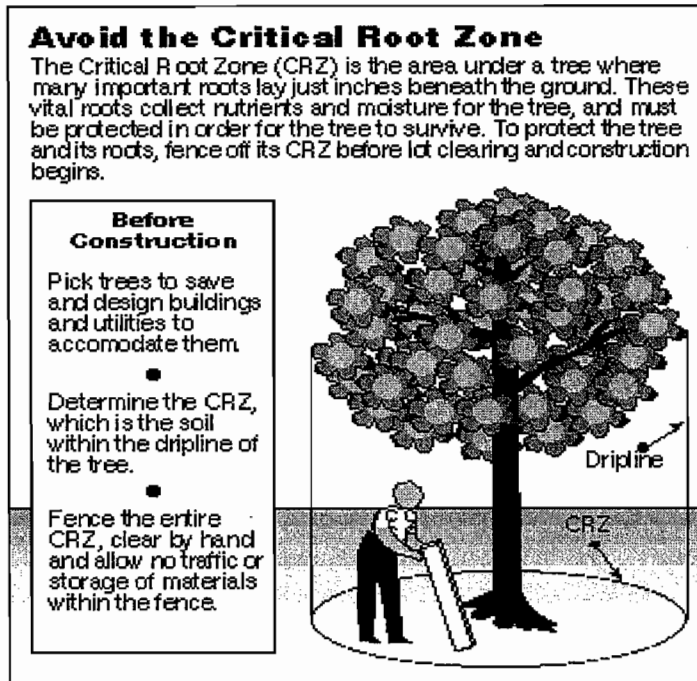
Standards

1. Clearly mark tree protection zone.
2. Establish tree protection zones that are appropriate in size.
3. Install fencing around tree protection zones that is sturdy enough for the size of construction operation.
4. Monitor and enforce tree protection measures.
5. Protect soil and roots as well as tree trunk and crown.

Critical Root Zone (CRZ)

For successful tree protection to occur, a good understanding of the concepts of the **critical root zone (CRZ)** is required (Figure 4). The CRZ is equivalent to the tree protection zone, as referred to in the City Code of Ordinances, at Section 14-30(3). Basically, the CRZ extends out from the tree trunk 1.5 feet for every 1-inch of trunk diameter. A 20-inch diameter tree has a CRZ of 30 feet (radius around the tree).

Figure 4.



Standards

1. Replace topsoil removed during grading before planting trees.
2. Avoid trenching for irrigation system, utility line, or other subterranean installation or repair within the CRZ.
3. Avoid grade changes including both soil cuts and soil backfill within the CRZ.
4. Grade areas outside the CRZ to avoid tree root damage.
5. Avoid soil compaction within the CRZ from the use of equipment, vehicles, material storage, and foot traffic.
6. Avoid soil contamination from equipment washouts (especially concrete) and vehicle maintenance within the CRZ.
7. Install and pave parking lots, driveways and walkways outside the CRZ.

8. The placing of nails, screws and spikes in trunks to attach mail boxes, signs, lighting or other structures is prohibited.
9. Avoid trunk wounds and broken limbs from vehicles and heavy equipment.
10. Avoid trunk wounds from string weed trimmers and lawn mowers.
11. Avoid tree fire injury or excessive heat.

SECTION 4. TREE REMOVAL AND REPLACEMENT

Tree removal and replacement activities will be required for every tree at some point. The overall goals of tree removal and replacement are to maintain public safety and community forest health while also preserving tree canopy cover.

Many reasons occur for tree removal. Trees may be growing in the wrong location, without adequate growing space and are in conflict with hardscape (driveways, walkways, etc.) or other infrastructure. Trees may be old and at the end of their normal life span. They may be dead or in poor or hazardous condition and require removal to protect the safety of the owner or the public in general. Whatever the reason for removal, the site should be evaluated by the City Forester to determine if another tree can be planted in the same or a nearby location.

Tree Removal and Replacement

Standards

1. Evaluate tree health and risk for failure before removing old, large, landmark, or historic trees.
2. Experienced professionals shall remove the trees.
3. Reduce the number and frequency of necessary tree removals through proper tree selection, placement, protection and maintenance.
4. Remove trees in irreversible health decline and poor condition.
5. Remove trees creating a hazardous situation that can not be remedied with pruning, cabling, and bracing.
6. Remove trees with characteristics in conflict with the site (oak with large acorns planted in parking lot).
7. Remove trees located where growing space is inadequate.
8. Remove trees with unattractive form, or messy, hazardous or noxious flowers or fruit.
9. Replace removed trees with large canopy trees wherever and whenever possible.

REFERENCES

A Technical Guide to Tree Conservation in Athens-Clarke County, Georgia
Head, Connie, Athens-Clarke County Arborist, Athens, Georgia

International Society of Arboriculture (ISA) Consumer Information Brochures

“New Tree Planting,” Champaign, IL 61826-3129, USA.

“Benefits of Trees,” Champaign, IL 61826-3129, USA.

“Avoiding Tree and Utility Conflicts,” Champaign, IL 61826-3129, USA.

“Proper Mulching Techniques,” Champaign, IL 61826-3129, USA.

“Avoiding Tree Damage During Construction,” Champaign, IL 61826-3129, USA.

“Pruning Mature Trees,” Champaign, IL 61826-3129, USA.

“Recognizing Tree Hazards,” Champaign, IL 61826-3129, USA.

“Tree Selection,” Champaign, IL 61826-3129, USA.

Building with Trees

The National Arbor Day Foundation, Lincoln, Nebraska, USA

APPENDIX

SPECIES LIST

(Suggested, not inclusive)

Overstory (Minimum Height 25 Feet)

Native		Non-Native	
Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer negundo</i>	Boxelder	<i>Ulmus parvifolia</i>	Chinese Elm, Lacebark Elm
<i>Acer rubrum</i>	Red Maple	<i>Zelkova serrata</i>	Japanese Zelkova
<i>Acer saccharum</i>	Sugar Maple	<i>Koelreuteria bipinnata</i>	Bougainvillea Goldenraintree
<i>Amelanchier arborea</i>	Downy Serviceberry	<i>Metasequoia glyptostroboides</i>	Dawn Redwood
<i>Betula nigra</i>	River Birch	<i>Ginkgo biloba</i>	Ginkgo
<i>Carpinus caroliniana</i>	American Hornbeam	<i>Zelkova serrata</i> 'Green Vase'	Green Vase Zelkova
<i>Carya glabra</i>	Pignut Hickory	<i>Zelkova serrata</i> 'Village Green'	Village Green Zelkova
<i>Carya ovata</i>	Shagbark Hickory		
<i>Carya tomentosa</i>	Mockernut Hickory		
<i>Castanea pumila</i>	Allegheny Chinquapin		
<i>Catalpa bignonioides</i>	Southern Catalpa		
<i>Cedrus deodara</i>	Deodar Cedar		
<i>Celtis laevigata</i>	Sugarberry		
<i>Diospyros virginiana</i>	Persimmon		
<i>Fagus grandifolia</i>	American Beech		
<i>Fraxinus americana</i>	White Ash		
<i>Fraxinus pennsylvanica</i>	Green Ash		
<i>Gleditsia triacanthos</i>	Honeylocust		
<i>Ilex opaca</i>	American Holly		
<i>Juglans nigra</i>	Black Walnut		
<i>Juniperus communis</i>	Common Juniper		
<i>Juniperus silicicola</i>	Southern Redcedar		
<i>Liquidambar styraciflua</i>	Sweetgum		
<i>Liriodendron tulipifera</i>	Yellow Poplar		
<i>Magnolia grandiflora</i>	Southern Magnolia		
<i>Morus rubra</i>	Red Mulberry		
<i>Nyssa sylvatica</i>	Blackgum		
<i>Oxydendrum arboreum</i>	Sourwood		
<i>Pinus strobus</i>	Eastern White Pine		
<i>Platanus occidentalis</i>	American Sycamore		
<i>Populus deltoides</i>	Eastern Cottonwood		
<i>Quercus alba</i>	White Oak		
<i>Quercus coccinea</i>	Scarlet Oak		
<i>Quercus falcata</i>	Southern Red Oak		
<i>Quercus falcata</i> var.	Cherrybark Oak		
<i>Quercus laurifolia</i>	Laurel Oak		
<i>Quercus lyrata</i>	Overcup Oak		
<i>Quercus marilandica</i>	Blackjack Oak		
<i>Quercus michauxii</i>	Swamp Chestnut Oak		
<i>Quercus nigra</i>	Water Oak		

Overstory (Minimum Height 25 Feet) Continued

Native		Non-Native	
Scientific Name	Common Name	Scientific Name	Common Name
<i>Quercus palustris</i>	Pin Oak	<i>Pistacia chinensis</i>	Chinese Pistache
<i>Quercus phellos</i>	Willow Oak	<i>Cercidiphyllum japonicum</i>	Katsuratree
<i>Quercus prinus</i>	Chestnut Oak		
<i>Quercus stellata</i>	Post Oak		
<i>Quercus velutina</i>	Black Oak		
<i>Quercus virginiana</i>	Live Oak		
<i>Salix nigra</i>	Black Willow		
<i>Sassafras albidum</i>	Sassafras		
<i>Taxodium distichum</i>	Baldcypress		

Understory (Maximum Height 25 Feet)

Native		Non-Native	
Scientific Name	Common Name	Scientific Name	Common Name
<i>Cercis canadensis</i>	Redbud	<i>Vitex agnus-castus</i>	Chaste Tree
<i>Cornus florida</i>	Flowering Dogwood	<i>Prunus x yedoensis</i>	Cherry, Yoshino
<i>Halesia carolina</i>	Carolina Silverbell	<i>Prunus serrulata</i> 'Kwanzan'	Cherry, Kwanzan
<i>Malus spp.</i>	Apple, Crabapple	<i>Prunus x "Okame"</i>	Cherry, Okame
<i>Ostrya virginiana</i>	Eastern Hophornbeam	<i>Prunus x yedoensis</i> "Akebono"	Cherry, Akebono