

NORRIS URBAN FOREST MANAGEMENT PLAN

NOVEMBER 2023

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SUMMARY

The Norris Urban Forest is defined as all the trees that occur within the city limits of Norris, exclusive of the Norris Watershed, Norris Dam State Park, and the Tennessee Valley Authority Norris Dam Reservation. The focus of this plan is on the municipal lands that the Tree Commission is charged with managing. These include the road right-of-ways, maintained city parks and commons, and unmaintained forested city-owned tracts outside of the Norris Watershed. After extensive discussions and consideration of the results of a community attitudes survey, the following vision statement was adopted to guide the development of this plan.

Vision: The City of Norris will maintain a healthy and diverse urban forest as an essential environmental, economic, aesthetic, and community asset for present and future generations.

The tree canopy coverage for Norris as a whole is 82 percent. Canopy coverage for city-managed lands, excluding the Norris Watershed and Tennessee Valley Authority- and state-managed lands, is 53 percent. While canopy coverage is greater than when Norris was founded in 1933, it has decreased in recent decades as commercial, institutional, and residential development expanded in previously forested areas.

Approximately 2,500 trees of 90 different species occur on maintained municipal lands. The 10 most frequently occurring trees comprise 59% of all trees with flowering dogwood the most numerous, followed by eastern red cedar, tulip tree, and white oak. Four species, 2.3% of all trees, are invasive. The health of 79% of trees was rated as good, 16% as fair, and 5% as poor, dead, or dying. The most frequently identified maintenance task is removal of vines, followed by pest and disease treatment, pruning, and removal. The trees on maintained municipal lands have a replacement value of about \$4.1 million and provide about \$8,100 in annual benefits for air pollutant removal, carbon sequestration and avoided runoff.

The goals for the management of the Norris Urban Forest are threefold:

- Operational: Manage the trees on municipal lands in a professional, sustainable, equitable, and safe manner while maintaining the current canopy coverage.
- Administrative: Effectively coordinate the activities of the Tree Commission and the Norris Public Works Department and other entities.
- Public Awareness and Involvement: Proactively inform the public about proper tree care and the value of trees.

Each of these goals has associated objectives.

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Introduction

The Norris Tree Commission was formally established by a 1980 city ordinance and charged with the responsibility to “develop and administer a written plan for the planting, maintenance, and removal of trees or other growth on all municipal lands of any character whatsoever including all parks, ‘commons’ or any other open space and the entire right of way of all public highways including state roads, county roads, and city streets with the sole exception of the City of Norris Watershed” (Norris Municipal Code, Title 2 Boards and Commissions, Etc., Chapter 3 Tree Commission). This written plan is to be presented annually to the City Council and constitutes the city’s official comprehensive tree plan.

While the Tree Commission has long been developing annual workplans, these plans lack the comprehensive condition assessment and long-term outlook necessary to effectively manage trees on municipal lands. The Tree Commission has therefore developed this Norris Urban Forest Management Plan to guide its actions which, among other things, include the continued development of annual workplans.

For purposes of this plan, the Norris Urban Forest is defined as all the trees that occur within the city limits of Norris, exclusive of the Norris Watershed and Tennessee Valley Authority (TVA)- and state-managed lands. The focus of the plan, however, is on the municipal lands that the Tree Commission is charged with managing. These include the city-managed road right-of-ways, maintained city parks and commons, and unmaintained forested city-owned tracts (“natural areas”) outside of the Norris Watershed (Figure 1). After extensive discussions and with consideration of the results of a community attitudes survey (described below in Section 4), the following vision statement was adopted to guide the development of this plan.

Vision: The City of Norris will maintain a healthy and diverse urban forest as an essential environmental, economic, aesthetic, and community asset for present and future generations.

Status of the Norris Urban Forest

History and Land Use Changes - At the time of its founding by the TVA in 1933, the location of the future city of Norris was a mix of croplands, pastures, and woodlands. The preservation of its rural aesthetic was one of the guiding principles in TVA’s planning of the city as a model community. This was exemplified in the curving roadways, preservation of large areas for parks, and the preservation of a greenbelt surrounding the city. As part of its landscaping efforts, TVA preserved many trees during the initial development of the city and planted numerous trees in public spaces (Figure 2). Many early residents also preserved and planted trees in their yards under the direction of a resident landscape architect.



Figure 1. Municipal lands where trees are managed by the Norris Tree Commission.

While several of TVA’s original concepts for Norris were either short-lived or never implemented, the preservation of the rural aesthetic continued to be a priority after TVA sold the town in 1948 and residents were able to purchase their homes. Although historical information is limited, tree canopy cover in Norris likely increased over the next decade as trees matured and little new development occurred. The subsequent expanded residential development to the west along West Norris and CCC Camp roads, to the east along East Norris, Dairy Pond and Reservoir roads and Laurel Place, and to the north along Deer Ridge Road, Hickory Trail, and Chestnut and Butternut drives reversed the trend and resulted in a decrease in tree canopy cover. This decrease is continuing as the remaining forested lots are developed, often with extensive tree clearing. The industrial development at Cedar Place, Sawmill Road, and, more recently, the large institutional development at Sycamore Place also decreased tree canopy cover. Norris recently expanded by annexing property along State Route 61 north and south of

its intersection with US 441. To date there has been limited subsequent development in this area that has affected the sparse tree canopy.

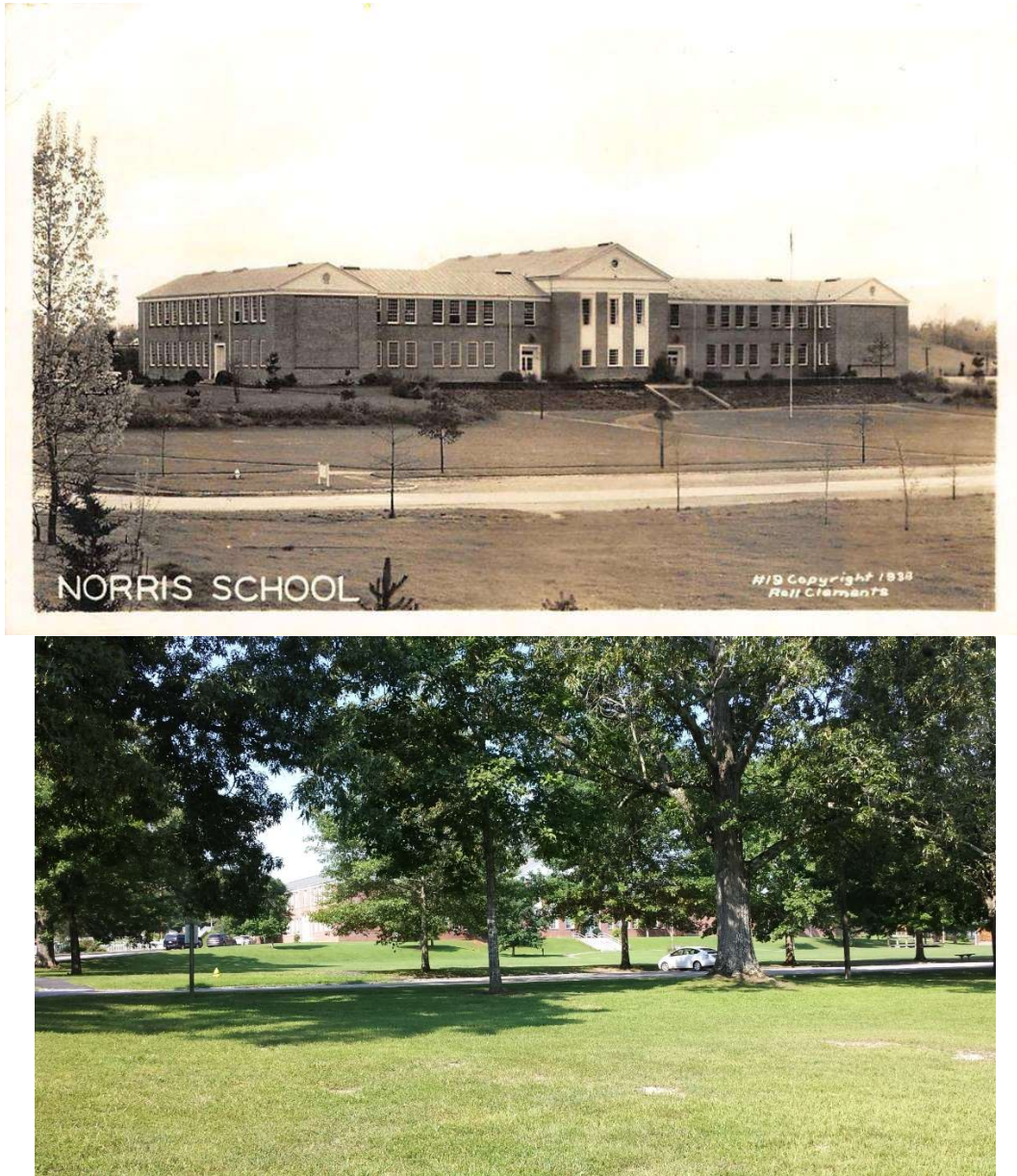


Figure 2. 1938 (top) and 2018 (bottom) photographs of planted trees and other landscaping at the Norris Commons and Norris Middle School campus. Several of the trees along the road shown in the 1938 photo died around 1990 and were replaced with the smaller trees shown in the 2018 photo.

Environmental Conditions – The Norris area has a moderate climate with average January and July temperatures of 34.8°F and 74.2°F, respectively. The average minimum January temperature is 25.2°F and the average maximum July temperature is 85.1°F. The average annual precipitation is 58 inches and the average annual snowfall is 3 inches. Precipitation is

well-distributed throughout the year, with the greatest amounts from December through April and the least in late summer and early fall (U.S. Climate Normals, 1991–2020 for Norris, TN; NCIE 2021a). The frost-free season (with 50% or less chance of 32°F or lower temperature) extends, on average, from April 22 through October 25 (NCIE 2021b).

Norris is in Plant Hardiness Zone 7a, based on the annual extreme minimum temperature of 0 to 5°F during the 1976–2005 period (USDA 2012). Due to anticipated warmer winters, the hardiness zone is projected to change to Zone 8 (10 to 20°F) by mid- to late-century (USDA 2021). This projected change has implications on the selection of tree species to be planted in Norris (Sylvester et al. 2016). A more recent USDA Forest Service analysis of climate change effects (Iverson et al. 2019, Peters et al. 2020) based on a combination of global climate change models and representative greenhouse gas concentration pathways, shows changes in future habitat suitability for numerous tree species. For the greater Knoxville, Tennessee area, including Norris, a large decrease in habitat suitability by late this century is predicted for some locally common trees including tulip tree, sugar maple, black locust, and pawpaw. Other trees for which smaller decreases are predicted include Virginia pine, red maple, pignut hickory, sourwood, scarlet oak, eastern hemlock, sycamore, and silver maple. Trees for which habitat suitability is predicted to increase include shortleaf pine, sweetgum, northern red oak, winged elm, post oak, and persimmon.

Norris is in the Ridge and Valley physiographic province which is characterized by parallel ridges and valleys oriented northeast to southwest. The immediate Norris area is underlain by dolomite and limestone. The dominant soil map unit is the Fullerton-Pailo complex which together makes up about two-thirds of the land area. These soils, located on hills and ridges, are deep, cherty, and well-drained with a red clayey subsoil. Three soil types occur on most of the remaining area. The Colbert-Lyerly-Rock outcrop complex is a clayey soil on ridges over limestone with low to moderate available water capacity. The Dewey silt loam is a moderately deep to deep well-drained soil with a clayey subsoil and medium natural fertility and available water capacity. The Tasso loam is a deep, moderately well-drained soil of low fertility. The Dewey and Tasso soils occur in several relatively small patches in the southeastern and southwestern parts of Norris (NRCS 2021).

Canopy Cover – Trees currently cover approximately 82 percent of the area within the city limits of Norris (Table 1). A large proportion of this tree canopy cover is found on public lands comprised of portions of the TVA Norris Dam Reservation and Norris Dam State Park, state-managed right-of-ways, county school lands, and city-owned lands including the Norris Watershed and park and commons areas. For municipal lands managed by the Tree Commission (parks, commons, road right-of-ways, but excluding the Norris Watershed), the tree canopy cover is 53 percent.

Table 1. Land cover in Norris for by land ownership classification.

Land Cover Class	Land Cover, Percent of Area \pm 1 Standard Error*			
	Entire City	All Public Lands	Municipal Lands	Non-Public Lands
Tree/Shrub	82.2 \pm 1.9	92.0 \pm 1.6	53.0 \pm 3.2	70.4 \pm 2.8
Grass/Herbaceous	11.2 \pm 1.5	4.7 \pm 1.2	23.7 \pm 2.7	19.6 \pm 2.4
Impervious Road	3.5 \pm 0.9	1.3 \pm 0.7	17.3 \pm 2.4	0.4 \pm 0.4
Impervious Buildings	0.9 \pm 0.5	0.3 \pm 0.3	0.4 \pm 0.4	3.9 \pm 1.2
Impervious Other	1.2 \pm 0.5	1.3 \pm 0.7	5.2 \pm 1.4	4.2 \pm 1.3
Soil/Bare Ground	0.5 \pm 0.3	0	0.4 \pm 0.4	1.2 \pm 0.7
Water	0.5 \pm 0.3	0.3 \pm 0.3	0	0.4 \pm 0.4
Total Area (Acres)	5,835	3,426	190	2,409

*Land cover determined from classification of Google aerial photographs using i-Tree Canopy (<https://canopy.itreetools.org/>) and 2022 parcel ownership information provided by the Anderson County Property Assessor.

Tree Inventory Results – In 2017, Tree Commission members began a systematic inventory of trees on municipal lands. The surveyed areas included the various commons, city parks, and road right-of-ways (Figure 2). Trees on other municipal lands, most notably the various forested city-owned lots that are not regularly mowed or otherwise actively managed, have not yet been inventoried. This plan will be updated to include the results of their inventory once it is completed.

For purposes of the inventory, trees were defined as woody material with a diameter of at least 1 inch at breast height (diameter at breast height (DBH), 4.5 feet above ground) and of a species that usually has a single perennial trunk, a branched crown, and at maturity a DBH of at least 3 inches and a height of at least 15 feet. Recently planted trees with diameters less than 1 inch were also included in the inventory. Data recorded for each tree included species, location including street address and latitude/longitude coordinates, land use, site type, DBH, overall condition, conflicts with sidewalks and overhead utility lines, and management needs. The i-Tree Streets computer application (see <https://www.itreetools.org/tools>) was initially used to manage the inventory data. After support for this application was discontinued, the database was converted to the more comprehensive i-Tree Eco application.

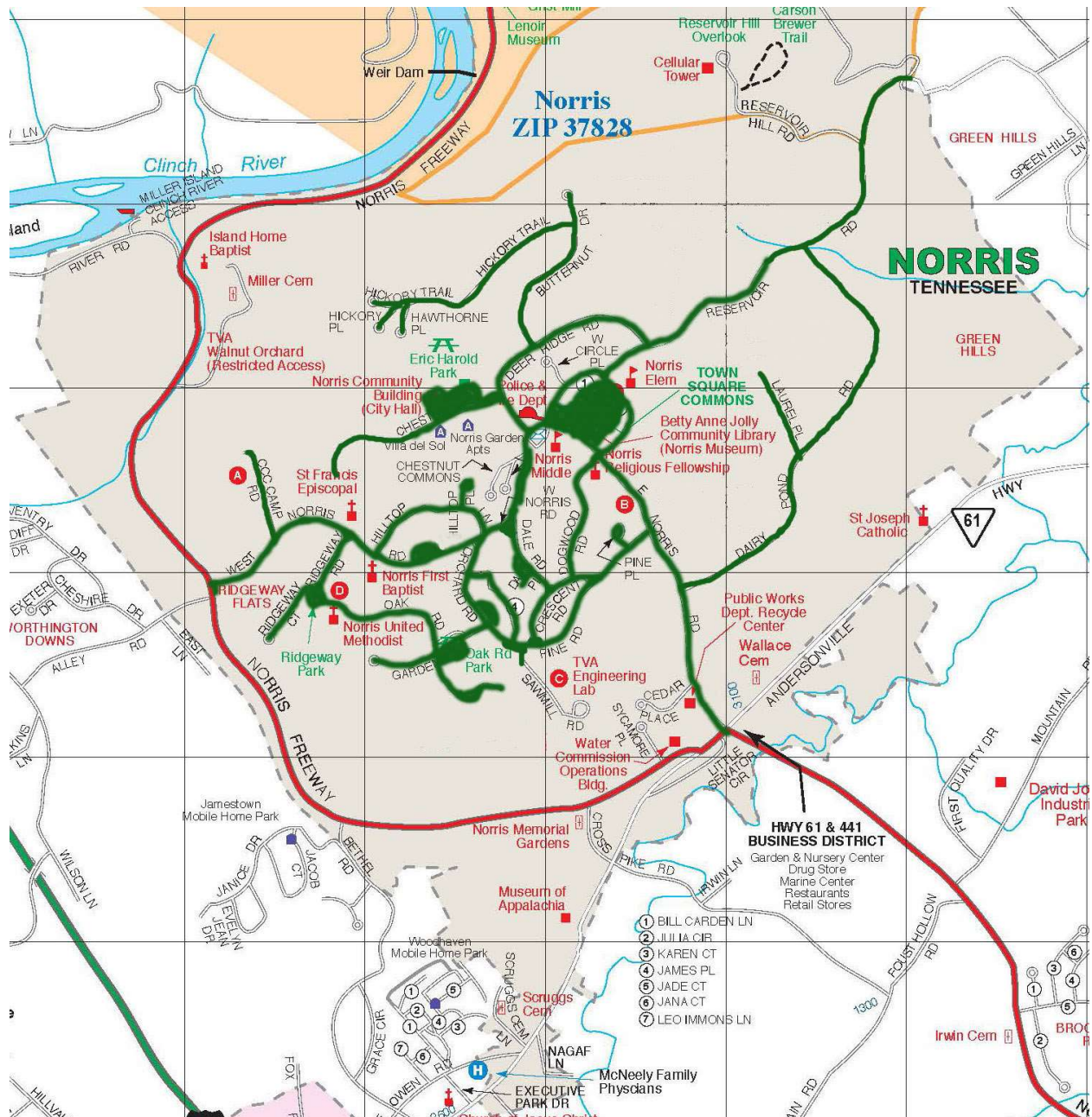


Figure 3. Inventoried Municipal Lands (highlighted in dark green) as of August 2022.

i-Tree ECO is a component of i-Tree Tools, a peer-reviewed, regularly updated software suite developed by the USDA Forest Service and cooperators that provides urban forestry analysis and benefits assessment tools. The i-Tree Tools are designed to help communities of all sizes strengthen their urban forest management and advocacy efforts by quantifying the structure of the community forest and the environmental benefits that it provides.

As of August 2022, 2,523 trees of 90 different species, plus several additional varieties, have been inventoried on municipal lands. The ten most frequently occurring tree species comprise 58.7% of all trees with flowering dogwood the most numerous and 15.2% of all trees (Figure 4). Thirty-three species are represented by only 1–2 individuals on surveyed municipal lands; these

include baldcypress, red and loblolly pines, blue spruce, honey locust, willow, chestnut, and scarlet oaks, shagbark and pignut hickories, Kentucky coffee tree, paperbark and Amur maples, linden, and princess tree. See Appendix A for the full species list.

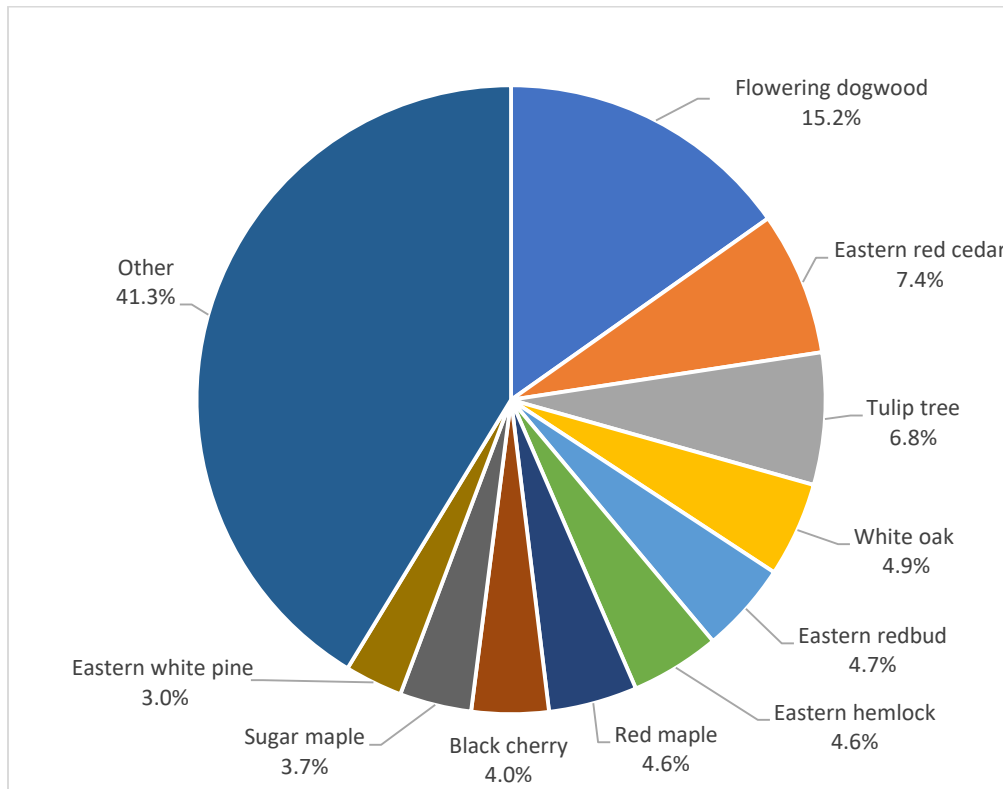


Figure 4. Tree species composition.

Figure 5 compares the percentages of trees in the most common genera. The most abundant tree genus is *Cornus* (dogwoods) at 15.9% of all trees followed by *Quercus* (oaks) at 13.5% and *Acer* (maples) at 9.9%.

The percentages of individual species illustrated in Figure 4 and listed in Appendix A, as well as the percentages of the most numerous tree genera (Figure 5), show a relatively high species diversity that is dominated by native species. A commonly cited urban forestry rule-of-thumb is that no single species should comprise more than 10%, no single genus should comprise more than 20%, and no single family should comprise more than 30% of an urban tree population (e.g., Santamour 1990, Kendal et al. 2014). This recommendation is to minimize severe losses in the event of a species- or genus-specific epidemic such as Dutch elm disease in the 20th century which largely eliminated American elm trees and the more recent loss of ash trees due to the emerald ash borer, as well as losses from severe weather events.

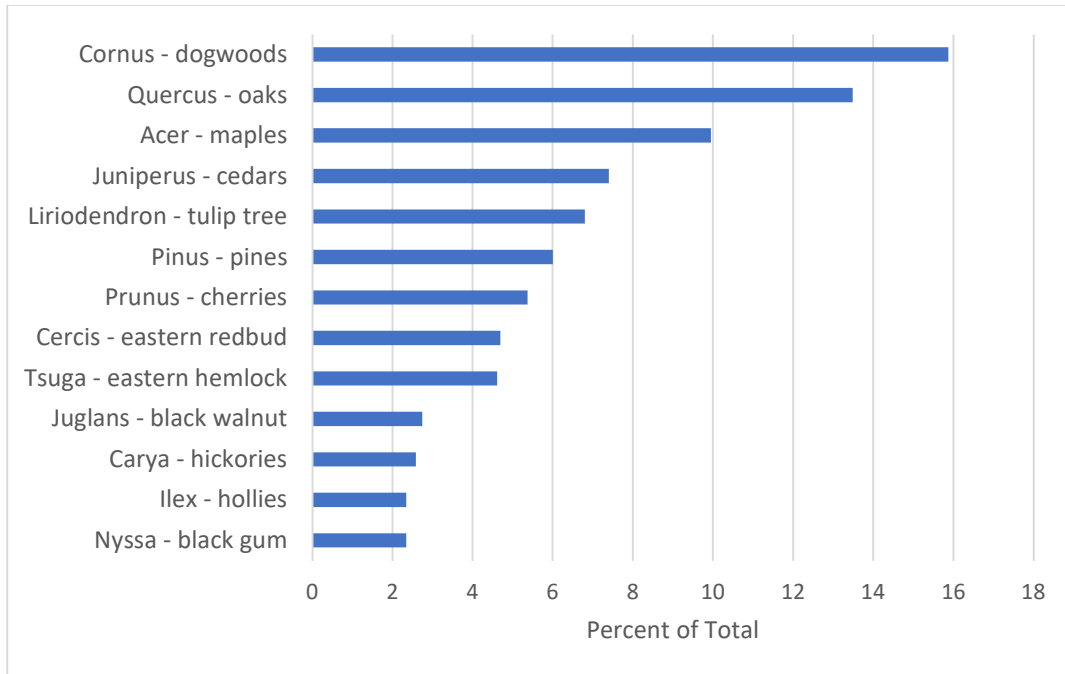


Figure 5. Percent of trees in the most common genera.

Flowering dogwood comprises 15.2% of all inventoried trees, which exceeds the 10% rule for a single species. Flowering dogwood has been widely planted and also occurs as natural ingrowth on road right-of-ways and other municipal lands. No tree genus exceeds the 20% rule (Figure 5) and the most abundant family, Fagaceae (beeches, oaks, chestnuts) comprises 16.4% of all trees followed by Cornaceae (dogwoods) at 15.9%.

About 76% of the trees (68 species) are native to Tennessee, 81% native to North America, and 19% not native to either Tennessee or North America and mostly of Asian origin. Four species and 50 individual trees (2.3% of all trees) are considered invasive (Tennessee Invasive Plant Council 2021). The Callery pear (commonly known as the Bradford pear) is by far the most numerous at 45 trees, followed by mimosa, tree-of-heaven, and princess tree.

The largest diameter tree is a 58-inch northern red oak in the southeast corner of the Norris Commons close to the East Circle Road tunnel (Figure 6). Thirty-eight trees have a diameter of at least 36 inches. Figure 7 shows the distribution of trees by diameter class; the 6–12-inch diameter class contains considerably more trees than any other diameter class due in part to the prevalence of dogwoods and eastern redbud.



Figure 6. The largest diameter tree on municipal lands, a 58-inch northern red oak on the Norris Commons.

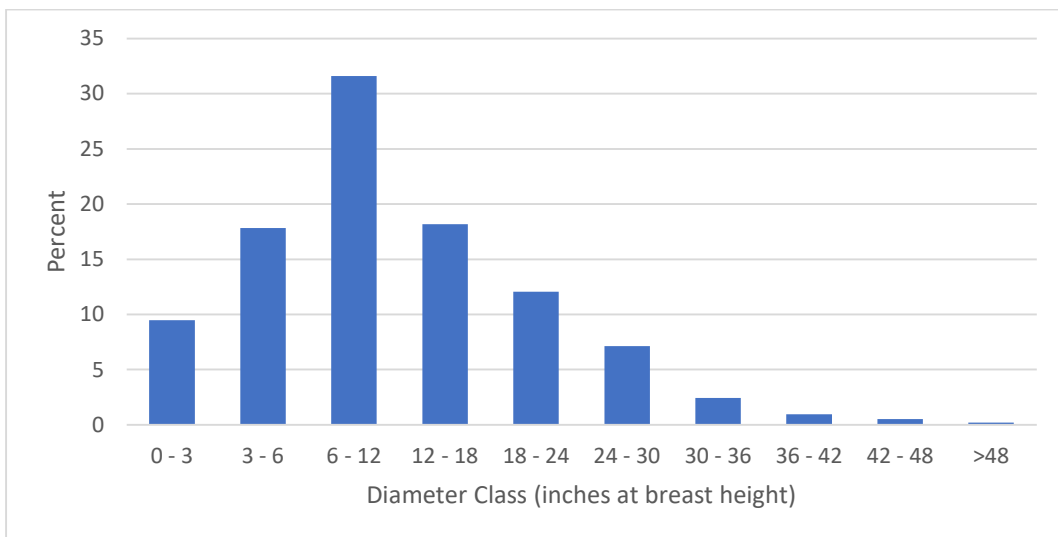


Figure 7. Percent of trees by diameter class (DBH = stem diameter at 4.5 feet above ground).

About two-thirds of trees on inventoried municipal lands are on road right-of-ways (i.e., “street trees”). Twenty-one trees, almost all street trees, were identified as causing conflicts with sidewalks, primarily due to tree roots pushing up the sidewalk. In several of these cases, the tree was in place when the sidewalk was constructed. Conflicts between trees and overhead utility lines were uncommon and identified for 27 trees; an additional 29 trees had overhead utility lines present but with no apparent conflicts. The number of trees causing conflicts with underground utility lines is unknown.

Tree health was rated by assessments of the trunk and branches and of the foliage and crown condition. Table 2 lists the results of these assessments.

Table-2. Results of tree health assessments.

<u>Trunk and branches</u>		<u>Foliage and crown condition</u>	
Condition	Percent of trees	Condition	Percent of trees
Good	78.0	Good	79.5
Fair	16.1	Fair	15.8
Poor, dead, or dying	5.9	Poor, dead, or dying	4.7

Table 3 lists identified maintenance tasks other than addressing sidewalk and overhead utility line conflicts. This listing is incomplete, as necessary maintenance tasks were not recorded at the beginning of the inventory. The most frequently identified maintenance task was the removal of vines. The vines of most concern are the invasive oriental bittersweet, English ivy, winter creeper, Japanese honeysuckle, and kudzu. The presence of kudzu is restricted to a relatively small area near the intersection of Orchard and Sawmill Roads. Poison ivy was also identified as a concern in areas of high public use. Formal risk assessments based on International Society of Arboriculture standards have not been conducted for most of the trees identified for removal; based on observations during the inventory, most of these trees likely present a low to moderate risk and are not high priority for removal. Some of the trees identified as high priority for removal during the initial inventory or by subsequent observations have been removed and Table 3 reflects their status as of mid-2022.

Table 3. Tree maintenance tasks identified during tree inventory.

Maintenance task	Number of trees
Remove vines	141
Treat pest/disease	82
Remove tree	48
Prune	40
Remove brush	17
Stake/train	2
Crown reduction/thinning	2

The pests of highest concern currently affecting trees on municipal lands are two invasive insects, the hemlock woolly adelgid (*Adelges tsugae*) and the emerald ash borer (*Agilus planipennis*). Almost all hemlock trees over 4–5 inches dbh that have not been regularly treated with insecticide show signs of adelgid infestation. Several ash trees died over the last 6–7 years as a result of ash borer infestation. A few large ash trees, selected for their high landscape

value, are periodically treated with insecticide and remain in fair or good shape. The other surviving ash trees are too small to be attacked by the ash borer. Other aspects of the health and management needs of trees on municipal lands were not systematically recorded when the tree inventory was initiated.

Value of the Norris Urban Forest – The i-Tree ECO program provides quantities and associated monetary values for many attributes of inventoried trees using models that consider the characteristics of measured trees and local environmental attributes. See <https://www.itreetools.org/support/resources-overview/i-tree-methods-and-files/i-tree-eco-resources> for descriptions of the models including the costs assigned to various attributes.

Based on the i-Tree ECO analysis, the 2,523 inventoried trees, most of which are street trees, remove about 1,120 pounds of air pollutants (ozone, carbon monoxide, nitrogen dioxide, small particulate matter, and sulfur dioxide) per year with an associated value of \$945. They store about 1,205 tons of carbon, with a value of \$206,000, and annually sequester about 22 tons of carbon with an associated value of \$3,710. The other major quantified benefit is through the reduction of stormwater runoff, which is reduced by about 52,000 cubic feet (389,000 gallons) per year with an associated value of \$3,400. Together, these quantified benefits for air pollutant removal, carbon sequestration, and avoided runoff have an annual value of about \$8,100, about \$5 per Norris resident. The quantified benefits of the trees on all municipal lands, excluding the Norris Watershed, would be much greater given that several largely forested municipal tracts totaling over 30 acres have not been inventoried.

The inventoried trees have total replacement value of about \$4.1 million. Other benefits of the Norris urban forest are more difficult to quantify. These include reduced summer temperatures and reduced energy demand for heating and cooling buildings (Heisler 1986), improved human health (Nowak et al. 2014, Ulmer et al. 2016), reduced crime (Gilstad-Hayde et al. 2015, Troy et al. 2012), higher educational achievement (Kuo et al. 2021), increased property values (Escobedo et al. 2015, Bridges et al. 2020), increased commercial activity (Wolf 2005), enhanced recreation opportunities, and provision of wildlife habitat (Belaire et al. 2014, Wood and Esaian 2020).

Current Regulations, Policies, and Practices

Ordinances and Codes – Several parts of the Norris Municipal Code (available at <https://www.mtas.tennessee.edu/node/136312> and in Appendix B) address the management of the Norris Urban Forest. Title 2 Boards and Commissions, Etc., Chapter 3 Tree Commission contains a few requirements related to trees on municipal lands¹. This code lists acceptable species of large and small trees that may be planted as street trees (§ 2-305) and minimal spacing requirements when planting large and small street trees, including between individual trees, from roads and sidewalks, from road intersections, and from underground utility lines (§ 2-306). It also requires that stumps of street trees and park (i.e., named public parks and commons areas) trees be removed to a level below the surface of the ground (§ 2-307). As stated in the introduction to this plan, it also assigns the Tree Commission the responsibility to

¹ In August 2021, the Tree Commission submitted revisions to Title 2, Chapter 3 for consideration by Norris City Council. The requested revisions consisted of changes to the list of acceptable street trees and minor editorial changes. As of September 2023, City Council had not acted on the requested revisions.

“develop and administer a written plan for the planting, maintenance, and removal of trees or other growth on all municipal lands” (§ 2-302).

Title 16 Streets and Sidewalks, Etc., Chapter 1 Miscellaneous establishes a two-foot minimum setback from the edge of street pavement for anything erected, grown, or placed on the right-of-way and authorizes the chief of police, building inspector, or city manager to require greater setbacks when determined necessary to eliminate visual impairments (§ 16-102).

Title 11 Municipal Offences, Chapter 5 Miscellaneous prohibits the removal or injury to trees on municipal lands without written authorization and describes the application process for requesting this authorization from the City Manager or his (sic) duly authorized representative² (§ 11-502). The removal of small trees (≤6 inches diameter at 8 inches above ground) by adjacent property owners is exempt from this prohibition. The authorization is through a written permit and payment of a \$5 permit fee. The City Manager or his (sic) duly authorized representative is responsible for planting, maintenance, and removal of trees on municipal lands and is authorized to inspect any tree on private property and remove any determined to be a public nuisance. Adjacent landowners have first refusal rights for the use of dead or dying trees removed from right-of-ways (§ 11-503).

The Norris zoning code contains Landscape and Screening Requirements at § 14-420. These requirements apply to new commercial, industrial, and multi-family (3 or more units) residential developments and do not apply to municipal lands. They require landscaping that is integrated into the site, visual screening of parking areas with plant materials and/or landscaped earthen berms, and islands planted with trees in parking areas with 12 or more parking spaces. They also set tree planting or tree preservation requirements for open space areas.

§ 14-417 of the Norris zoning code addresses standards for buffer zones on commercial and industrial properties adjacent to areas zoned for residential uses. The buffer zone must incorporate berms, vegetation, or a combination to screen the adjacent property. It also restricts tree removal from the ridgeline between State Route 61 and Dairy Pond Road.

[Tree City USA Designation](#) – The Tree City USA program was established by the Arbor Day Foundation in 1976 to raise awareness of the importance of trees and their proper care in communities across the U.S. Norris was first recognized as a Tree City USA in 1980—the first community in Tennessee to receive this recognition—and has annually maintained this recognition since then. While not a regulation or practice per se, participation in the Tree City USA program requires that Norris adhere to certain standards. To receive and maintain this recognition, a community must meet four standards established by the Arbor Day Foundation:

1. Maintain a tree board or department. The Tree Commission fills this role in Norris.
2. Have a community tree ordinance. The Norris tree ordinance and other ordinances addressing trees are described above.
3. Spend at least \$2 per capita per year on urban forestry.
4. Celebrate Arbor Day. Norris has held an Arbor Day ceremony in conjunction with Norris Elementary School annually since 1980. The ceremony is typically on the first Friday in March, the state-designated Arbor Day.

² In practice, the Tree Commission has sometimes been asked to provide a recommendation on the removal of such trees. Per § 2-302, this consultation on tree removals should be routine unless the tree presents an imminent threat.

Current Urban Forest Management Practices – Management of trees on municipal lands is shared by the Norris Public Works Department and the Tree Commission. The main tree-related activities of each are described below.

Public Works Department:

- Tree limb, brush, and leaf pickup, including raking and removing leaves from parks, commons, and sidewalks.
- Removal of dead and dying trees, as well as other hazard trees and the stumps of removed trees, from municipal lands. Depending on the characteristics of individual trees, this may be done by department staff or contractor. Unless the tree presents an imminent threat, the Tree Commission is to be consulted prior to tree removal per Norris Municipal Code § 2-302.
- Contracting for pruning of trees that requires the use of specialized equipment and/or expertise.
- Providing mulch produced by grinding tree limbs and leaves.

Tree Commission:

- Management of the Honor Tree Program, through which participants can sponsor a tree to be planted on municipal lands in honor or memory of a person or event. The Tree Commission works with the honor tree sponsor to select the tree species and planting location. It usually acquires and plants the tree and provides an engraved plaque that is placed on or near the tree. The Tree Commission mulches the tree and often installs protective fencing around it which is removed as the tree grows. The sponsor reimburses the city for the cost of the tree, plaque, and fencing. Sponsors have the option of acquiring the tree. There are currently about 250 honor trees, mostly on commons and maintained areas of parks.
- Management of invasive plants on municipal lands, with emphasis on removal of English ivy, oriental bittersweet and winter creeper vines from trees; tree-of-heaven (*Ailanthus*), princess (*Paulownia*), Callery (Bradford) pear, and mimosa trees; and burning bush, privet, bush honeysuckle, and mahonia shrubs. The priority areas for invasive plant management are the various commons areas, including the Norris Commons in town center, and city-owned parks including the Oak Road and Eric Harold parks. Invasive plant removal on residential right-of-ways is typically minimal unless the adjacent landowner is consulted.
- Treatment of diseased trees and trees infested by invasive insects. The treatment may be removal, pruning, or pesticide application. The Tree Commission is currently treating about 40 hemlock trees for the hemlock woolly adelgid and seven ash trees for the emerald ash borer with insecticides. Hemlock trees are treated by a soil drench application on a 4–5 year cycle and ash trees are treated by injection of insecticide into the tree trunk on a 3-year cycle.
- Pruning, where specialized skills and equipment is not required, for removal of dead and dying branches, road and sidewalk clearance, root pruning, risk mitigation, and structural improvement, including training young trees.
- Review of requests by adjacent property owners for maintenance or removal of trees on right-of-ways. Approvals are forwarded to the city manager who arranges the necessary work.

- Identification of dead and dying trees for removal on municipal lands by the Public Works Department.
- Maintenance of the Norris Commons Arboretum. The Norris Commons area was first certified as a Level I arboretum by the Tennessee Urban Forestry Council in 2018. Level I criteria include the presence of 30–59 properly maintained tree species labeled with their scientific and common names. The Tree Commission regularly prunes, weeds, and mulches arboretum trees and replaces labels as needed. Since the initial certification, continued tree planting has increased the number of different species from 36 to 52³. The arboretum was recertified in 2022.
- Inventory of trees on municipal lands. The Tree Commission initiated a systematic inventory of trees on municipal lands in 2017. The results of this inventory to date are described above in Chapter 2.

Community Attitudes

To evaluate community attitudes, values, and issues related to the Norris Urban Forest, the Norris Tree Commission conducted a survey in the spring of 2021. The survey was completed by 105 people. Details of the survey and complete survey results are presented in Appendix D. Following is a summary of the survey results.

The most important benefits of trees to the Norris community are 1) improve the quality of life and help define the character of Norris; 2) provide wildlife habitat; 3) provide shade, cool their surroundings, and reduce energy use; and 4) protect water quality, reduce erosion, and reduce stormwater runoff. Grouped together, the responses to this question highlight quality of life, pollution mitigation, and economic benefits.

The most important problems caused by trees on city property, including street trees, are 1) sidewalk and pavement damage; 2) safety problems with fallen trees and limbs; 3) tree roots impacting underground pipelines; and 4) blocking road visibility, traffic, sidewalks, and signs.

Sixty percent of respondents stated the current tree canopy coverage in Norris is satisfactory and the remaining respondents stated there should be more tree canopy coverage. No respondents stated there should be less tree canopy coverage.

Respondents were satisfied with the overall care and maintenance of trees on city property, with 87 percent rating it good or very good and 13 percent rating it fair, poor, or very poor. Slightly over a quarter of respondents stated the health and quality of trees on city property has improved over the last decade and similar numbers of respondents stated tree health and quality had stayed the same or were unsure. About a fifth of the respondents stated tree health and quality had declined.

The most important critical needs for trees on city property, according to respondents, are 1) increased preparedness for invasive pests and climate change; 2) increased budget for tree maintenance and care; and 3) more community education about trees. Actions individuals are willing to take to maintain and protect trees for future generations include 1) support increased funding to maintain and enhance trees; 2) plant new trees on their property; 3) support revising

³ As of August 2023

the Norris Municipal Code to provide more protection of trees; and 4) volunteer to plant and maintain trees on city property.

The overall results of the survey indicate that respondents see trees as an integral part of defining the character of Norris and believe that the city should maintain that character through proper management of its urban forest.

Planning Goals and Objectives

Goals

As stated above, the vision for the management of the Norris Urban Forest is:

The City of Norris will maintain a healthy and diverse urban forest as an essential environmental, economic, aesthetic, and community asset for present and future generations.

Based on the vision statement, the results of the ongoing inventory of trees on municipal lands, and the results of the community attitudes survey, the goals of this plan are as follows:

- Operational: Manage the trees on municipal lands in a professional, sustainable, equitable, and safe manner while maintaining the current canopy coverage.
- Administrative: Effectively coordinate the activities of the Tree Commission and the Norris Public Works Department and other entities.
- Public Awareness and Involvement: Proactively inform the public about proper tree care and the value of trees.

Specific objectives associated with each goal are described below.

Objectives

Operational

The operational goal is to manage the trees on municipal lands in a professional, sustainable, equitable, and safe manner while maintaining the current canopy coverage. This will be achieved through the following objectives.

1) Proactively monitor, prune and remove trees as necessary for safety, structural training, and other purposes. Trees in intensively managed public spaces (street trees, commons, parks) will be monitored and, as necessary, pruned on a cycle no longer than 5 years. Decisions on management of trees presenting a potential safety risk will be informed by the results of a tree risk assessment conducted in accordance with International Society of Arboriculture (ISA) Best Management Practices (Smiley 2011) and documented on the ISA Basic Tree Risk Assessment Form (Appendix E). All priority tree removal and pruning work will be completed within 3 months of identification. Record completed tree removal and major pruning work in the tree inventory database (Operational Objective #7).

2) Conduct all pruning in accordance with the current version of American National Standard A300 (Part 1 – Pruning; ANSI 2017) and the associated ISA Best Management Practices – Pruning (Lilly et al. 2019).

3) Maintain the current tree canopy coverage of 82 percent in Norris. Approaches to achieving this can include enforcing current ordinances (particularly Title 14 parts 417 and 420), events to

promote tree planting on private lands including tree giveaways, tree planting on suitable barren municipal lands, and new tree preservation ordinances.

4) Adhere to municipal codes and ordinances regarding tree planting, care, and removal as well as for buffer zones at new commercial, industrial, and multi-family residential developments.

5) Consider site suitability (e.g., soils, soil moisture, shading, proximity to roads and sidewalks, presence of utilities), future climate change and resiliency (e.g., Sylvester et al. 2016), and enhanced taxonomic, functional, and structural diversity when planting trees. Work toward the long-term goal of no more than 10% of trees of any species, 20% of any genus, and 30% of any family. No invasive trees will be planted on municipal lands and the planting of native trees is prioritized over non-native, non-invasive trees.

6) Maintain an uneven age distribution of trees as indicated by relatively uniform representation of relative size classes citywide and at the neighborhood level.

7) Maintain an inventory of the species composition, location, size, and condition of trees on intensively managed municipal lands (street trees, commons, parks). The inventory will be continuously updated to account for tree plantings and removals and other changes in the condition of individual trees. The inventory will be linked to a geographic information system (GIS) to provide mapping and improved reporting capabilities. The inventory will be regularly updated in conjunction with the tree monitoring described above in Operational Objective #1 and below in Operational Objective #8 and Public Awareness and Involvement Objective #3.

8) Design and implement a sampling-based inventory of trees and management needs on the unmanaged forested municipal lands (natural areas). Conduct management activities necessary to maintain the ecological health of the areas and assure their safe recreational use.

9) Newly planted trees will be inspected annually for the first three years following planting. Any identified maintenance needs, including structural pruning, will be promptly carried out.

10) Proactively address tree pests, including invasive species (Appendix C), through an integrated pest management strategy that includes the following.

- Eradicate tree-of-heaven, princess tree, and mimosa from municipal lands.
- Eradicate Callery (Bradford) pear from city parks and commons areas and work with adjacent landowners to eradicate it from right-of-ways.
- Manage invasive vines and shrubs on city parks and commons areas, with emphasis on English ivy, oriental bittersweet, kudzu, winter creeper, burning bush, privet, bush honeysuckle, mahonia and autumn and thorny olives (*Eleagnus* spp.).
- Prohibit the planting of invasive plants (Appendix C; <https://www.tnipc.org/invasive-plants/>) on municipal lands.
- Work with adjacent landowners to manage invasive shrubs and vines on right-of-ways.
- Continue cyclical insecticide treatment of hemlock trees for control of the hemlock wooly adelgid and select ash trees for control of the emerald ash borer.
- Maintain awareness of emerging tree pests and develop and implement appropriate management strategies. Current emerging threats include thousand cankers disease affecting walnut trees, Asian longhorn beetle affecting maples and a few other hardwoods, and spotted lanternfly affecting many trees, shrubs, and vines.

11) Certify and maintain certification of the Norris Urban Forest under the Sustainable Forestry Institute Urban and Community Forest Sustainability Standard⁴.

12) Promote sustainable utilization of trees, tree limbs, leaves, and other brush removed as part of routine maintenance practices. Priority uses, in descending order, include lumber, mulch, and firewood.

13) Ensure that the activities of the Tree Commission and other City tree-related actions are equitably distributed across the City.

Administrative

The administrative goal is to effectively coordinate the activities of the Tree Commission with the Norris Public Works Department and other entities and assure adequate funding for tree management activities. This will be achieved through the following objectives.

- 1) Regularly report Tree Commission activities at monthly City Council meetings.
- 2) Work to assure adequate funding for Tree Commission activities through the City budget process, fundraising, and grants.
- 3) Engage in City activities such as sidewalk construction and upgrades, municipal building construction and renovation, park development, subdivision development, and major road projects to maximize the protection of trees identified for preservation and oversee the planting of new and replacement trees where desirable and feasible.
- 4) Meet regularly with the Director of the Norris Public Works department and Clinton Utilities Board right-of-way maintenance staff prior to seasonal planning.
- 5) Work to assure that all positions on the Tree Commission are filled.
- 6) Periodically review and revise applicable City codes and ordinances to enhance the management of the Norris Urban Forest and implement the objectives of this plan.

Public Awareness and Involvement

The Public Awareness and Involvement goal is to proactively inform the public about proper tree care and the value of trees. This will be achieved through the following objectives.

- 1) Maintain the certification of the City of Norris as a Tree City USA.
- 2) Annually host an Arbor Day event in conjunction with Norris Elementary School.
- 3) Maintain and improve the Honor Tree program by advertising it, promptly acting on request for new honor trees, and inspecting and pruning honor trees on a 2-year cycle. Missing tags at healthy honor trees will be promptly replaced. Dead or dying honor trees will be replaced by the Tree Commission if within one year of planting. For trees planted more than one year that are dead or dying, the Tree Commission will attempt to contact the tree sponsor and offer to replace the tree at the sponsor's expense. When the tree sponsor declines to replace the tree or attempts to contact the tree sponsor are

⁴ The standard is currently under development and expected to be finalized in 2023. A draft of the standard is available at <https://forests.org/sfi-urban-forestry-standard/>.

unsuccessful, the dead or dying tree will be removed and the planting site, subject to normal suitability review, will be available for another honor tree or tree planted for another purpose.

4) Maintain the certification of the Norris Commons Arboretum and work towards the long-term goal of increasing its certification level from Level 1 (30–59 species) to Level 2 (60–89 species) by planting additional native trees in appropriate locations. Trees will not be planted in the open central portion of the Commons.

5) Maintain a Tree Commission webpage on the city website that includes a list of commission members, contact information, information about the honor tree program and an interactive, searchable map of honor tree locations, updated results of the tree inventory, links to relevant city codes, a list of trees recommended for planting, and other relevant information.

6) Maintain an active social media presence to inform the public of Tree Commission activities, upcoming events, tree management information, and related topics.

7) Host a booth at Norris Day to provide attendees information on tree care, the honor tree program, the Norris Commons Arboretum, and other tree-related topics.

8) Hold at least two public workdays annually to weed, mulch, prune, and plant trees on municipal lands.

9) Provide educational materials on the identification and management of invasive plants and tree pests. Related efforts include holding a public workday to remove invasive plants and, upon request, providing advice to individual landowners on invasive plant and pest management.

10) Advise individual landowners on tree care upon request.

11) Support other education-related efforts such as the Summer Recreation Program.

Implementation

The main vehicle for implementing this Norris Urban Forest Management Plan is the preparation of annual workplans at the start of each fiscal year. The workplans will be prepared in alignment with the goals and objectives listed above as well as any emergent issues identified in the future. Recurring items in the workplans will include anticipated budget needs, Arbor Day, Tree City USA recertification, maintenance of the Norris Commons Arboretum, an annual Norris Commons cleanup day and other public outreach efforts, administration of the honor tree program, and prompt identification and removal of hazard trees.

Once the annual workplan is drafted, meet with internal and external stakeholders/partners in early July to review the previous fiscal year's accomplishments and the new fiscal year workplan.

At the end of the fiscal year, the Tree Commission will prepare and make available to the public an annual report summarizing the commission's work during the year in relation to the annual workplan and the goals and objectives in the Norris Urban Forest Management Plan. Annually reported metrics will include the number of trees planted, removed, pruned, and treated for pests, as well as volunteer work hours.

The Norris Urban Forest Management Plan will be reviewed and revised as necessary on a cycle not to exceed five years.

Monitoring

Continuous monitoring of the Norris Urban Forest is necessary to meet the goals and objectives of this plan, especially in relation to identifying trees in need of pruning and removal and to respond to tree pest outbreaks. Monitoring will be conducted as follows:

Casual Monitoring

This monitoring consists of casual observations by Tree Commission members and City staff, primarily of trees needing prompt attention consisting of removal, remediation of storm damage, pruning, or treatment of damage from invasive species. The observations are logged by the Tree Commission and tracked until appropriately remediated.

Public Monitoring

This monitoring consists of receiving reports of tree issues from members of the public, who may report such issues directly to the Tree Commission or to the City office or raise the issue at City Council meetings. These reports are logged by the Tree Commission and tracked until appropriately remediated.

Systematic Tree Inventory

The systematic complete inventory of trees on actively managed municipal lands, including parks, commons, and road right-of-ways, will be repeated on a 5-year cycle. Identified tree maintenance issues, including removal, pruning, and invasive species treatment, are logged along with the other collected tree data and tracked until appropriately remediated.

Natural Area Tree Inventory

Trees on municipal natural areas—forested City lands outside the Norris Watershed that are not actively managed—will be inventoried using a point-sampling methodology. This inventory will be repeated on a 5-year cycle. Prescriptions on the management of the various municipal natural areas will be developed based on the inventory results with a focus on establishing and/or maintaining a healthy, diverse, resilient forest with minimal presence of invasive species.

Honor Tree Monitoring

Every honor tree in the City will be monitored on a 2-year cycle and the results of the monitoring recorded in an honor tree database. Identified tree maintenance issues, including removal, pruning, mulching, protective fencing, and replacement of tree tags/plaques will be logged and tracked until appropriately remediated.

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APPENDICES

Appendix A. Tree Inventory Results – Species Composition on commons, maintained parks, and road right-of-ways

Species	Number	% of Total
American beech (<i>Fagus grandifolia</i>)	10	0.4
American elm (<i>Ulmus americana</i>)	1	<0.1
American holly (<i>Ilex opaca</i>)	15	0.6
American hornbeam (<i>Carpinus caroliniana</i>)	1	<0.1
American sycamore (<i>Platanus occidentalis</i>)	19	0.8
Amur maple (<i>Acer tataricum</i> ssp. <i>ginnala</i>)	2	0.1
apple spp (<i>Malus</i>)	2	0.1
Baldcypress (<i>Taxodium distichum</i>)	3	0.1
basswood spp (<i>Tilia</i>)	8	0.3
Black cherry (<i>Prunus serotina</i>)	100	4.0
Black locust (<i>Robinia pseudoacacia</i>)	3	0.1
Black oak (<i>Quercus velutina</i>)	37	1.5
Black tupelo (<i>Nyssa sylvatica</i>)	59	2.3
Black walnut (<i>Juglans nigra</i>)	69	2.7
Blue chinese fir (<i>Cunninghamia lanceolata</i>)	4	0.2
Blue spruce (<i>Picea pungens</i>)	2	0.1
Boxelder (<i>Acer negundo</i>)	27	1.1
buckeye spp (<i>Aesculus</i>)	2	0.1
Callery (Bradford) pear (<i>Pyrus calleryana</i>)	45	1.8
Carolina buckthorn (<i>Frangula caroliniana</i>)	1	<0.1
cedar spp (<i>Cedrus</i>)	2	0.1
Chestnut oak (<i>Quercus montana</i>)	1	<0.1
Chinese chestnut (<i>Castanea mollissima</i>)	2	0.1
Chinese elm (<i>Ulmus parvifolia</i>)	10	0.4
Chinkapin oak (<i>Quercus muehlenbergii</i>)	5	0.2
Common crapemyrtle (<i>Lagerstroemia indica</i>)	8	0.3
Common persimmon (<i>Diospyros virginiana</i>)	33	1.3
Common privet (<i>Ligustrum vulgare</i>)	1	<0.1
dogwood spp (<i>Cornus</i>)	1	<0.1
Eastern hemlock (<i>Tsuga canadensis</i>)	116	4.6
Eastern hophornbeam (<i>Ostrya virginiana</i>)	2	0.1
Eastern red cedar (<i>Juniperus virginiana</i>)	186	7.4
Eastern redbud (<i>Cercis canadensis</i>)	118	4.7
Eastern white pine (<i>Pinus alba</i>)	75	3.0
elm spp (<i>Ulmus</i>)	1	<0.1
European buckthorn (<i>Rhamnus cathartica</i>)	1	<0.1
Flowering dogwood (<i>Cornus florida</i>)	384	15.2
Fringe tree (<i>Chionanthus virginicus</i>)	1	<0.1
Ginkgo (<i>Ginkgo biloba</i>)	4	0.2

hickory spp (<i>Carya</i>)	7	0.3
holly spp (<i>Ilex</i>)	43	1.7
Honeylocust (<i>Gleditsia triacanthos</i>)	2	0.1
Japanese flowering cherry (<i>Prunus serrulata</i>)	11	0.4
Japanese flowering crabapple (<i>Malus sieboldii</i> ssp. <i>sieboldii</i>)	15	0.6
Japanese maple (<i>Acer palmatum</i>)	4	0.2
Japanese red cedar (<i>Cryptomeria japonica</i>)	1	<0.1
Kanzan cherry (<i>Prunus kanzan</i>)	2	0.1
Kentucky coffee tree (<i>Gymnocladus dioica</i>)	1	<0.1
Kousa dogwood (<i>Cornus kousa</i>)	14	0.6
Leyland cypress (<i>x Cuprocyparis leylandii</i>)	37	1.5
Littleleaf linden (<i>Tilia cordata</i>)	1	<0.1
Loblolly pine (<i>Pinus taeda</i>)	1	<0.1
magnolia spp (<i>Magnolia</i>)	2	0.1
Mockernut hickory (<i>Carya alba</i>)	45	1.8
mountain ash spp (<i>Sorbus</i>)	1	<0.1
Northern hackberry (<i>Celtis occidentalis</i>)	14	0.6
Northern red oak (<i>Quercus rubra</i>)	37	1.5
Norway spruce (<i>Picea abies</i>)	12	0.5
oak spp (<i>Quercus</i>)	1	<0.1
Pecan (<i>Carya illinoensis</i>)	10	0.4
Persian silk tree/mimosa (<i>Albizia julibrissin</i>)	5	0.2
Pignut hickory (<i>Carya glabra</i>)	1	<0.1
Pin oak (<i>Quercus palustris</i>)	30	1.2
plum spp (<i>Prunus</i>)	21	0.8
Post oak (<i>Quercus stellata</i>)	8	0.3
red cedar spp (<i>Thuja</i>)	9	0.4
Red maple (<i>Acer rubrum</i>)	115	4.6
Red mulberry (<i>Morus rubra</i>)	10	0.4
Red pine (<i>Pinus resinosa</i>)	1	<0.1
River birch (<i>Betula nigra</i>)	16	0.6
Royal paulownia (<i>Paulownia tomentosa</i>)	1	<0.1
Sassafras (<i>Sassafras albidum</i>)	14	0.6
Saucer magnolia (<i>Magnolia x soulangeana</i>)	1	<0.1
Sawtooth oak (<i>Quercus acutissima</i>)	4	0.2
Scarlet oak (<i>Quercus coccinea</i>)	2	0.1
serviceberry spp (<i>Amelanchier</i>)	1	<0.1
Shagbark hickory (<i>Carya ovata</i>)	2	0.1
Shortleaf pine (<i>Pinus echinata</i>)	56	2.2
Shumard oak (<i>Quercus shumardii</i>)	3	0.1
Silver maple (<i>Acer saccharinum</i>)	9	0.4
Slippery elm (<i>Ulmus rubra</i>)	17	0.7

Sourwood (<i>Oxydendrum arboreum</i>)	10	0.4
Southern magnolia (<i>Magnolia grandiflora</i>)	25	1.0
Southern red oak (<i>Quercus falcata</i>)	75	3.0
Sugar maple (<i>Acer saccharum</i>)	93	3.7
Swamp white oak (<i>Quercus bicolor</i>)	7	0.3
Sweetbay magnolia (<i>Magnolia virginiana</i>)	1	<0.1
Sweetgum (<i>Liquidambar styraciflua</i>)	8	0.3
Topal holly (<i>Ilex x attenuata</i>)	1	<0.1
Tree of heaven (<i>Ailanthus altissima</i>)	2	0.1
Tulip tree (<i>Liriodendron tulipifera</i>)	171	6.8
Umbrella magnolia (<i>Magnolia tripetala</i>)	1	<0.1
Virginia pine (<i>Pinus virginiana</i>)	17	0.7
Water oak (<i>Quercus nigra</i>)	5	0.2
White ash (<i>Fraxinus americana</i>)	29	1.1
White oak (<i>Quercus alba</i>)	123	4.9
Willow oak (<i>Quercus phellos</i>)	1	<0.1
Yoshino flowering cherry (<i>Prunus x yedoensis</i>)	1	<0.1

Title 2. Boards and Commissions, etc.

2-5

CHAPTER 3

TREE COMMISSION

SECTION

- 2-301. Creation, members, terms, compensation, vacancies.
- 2-302. Duties and responsibilities.
- 2-303. Operation.
- 2-304. Definitions.
- 2-305. Street tree species to be planted.
- 2-306. Spacing.
- 2-307. Removal of stumps.
- 2-308. Cooperation with other segments of city government.

2-301. Creation, members, terms, compensation, vacancies. A commission to be known as the "Norris Tree Commission" is hereby created. The commission shall consist of the mayor or his duly authorized representative and six (6) Norris residents to be appointed by the mayor and ratified by council to serve for terms of three (3) years or until their successors are appointed. However the first members shall be appointed for such terms that the term of two (2) members shall expire annually thereafter. The members of the commission shall serve without pay. Any vacancy in the commission occurring otherwise than by expiration of a term shall be filled only for the unexpired term, and such appointment shall be made by the mayor. (1972 Code, § 1-1601)

2-302. Duties and responsibilities. It shall be the responsibility of the commission to develop and administer a written plan for the planting, maintenance, and removal of trees or other growth on all municipal lands of any character whatsoever including all parks, "commons" or any other open space and the entire right of way of all public highways including state roads, county roads, and city streets with the sole exception of the City of Norris Watershed, utilizing such facilities and appropriations as the city council may designate. Such plan will be presented annually to the city council and upon their acceptance and approval shall constitute the official comprehensive city tree plan for the City of Norris.

The commission shall also advise council concerning other worthwhile activities to improve the physical environment and improve the esthetic quality of the community. (1972 Code, § 1-1602)

2-303. Operation. The commission shall choose its own officers, make its own rules and regulations and keep a journal of its proceedings. A majority of the members shall be a quorum for the transaction of business. (1972 Code, § 1-1603)

2-304. Definitions. (1) "Street trees" are herein defined as trees, shrubs, bushes, and all other woody vegetation on land lying between property lines on either side of all streets, avenues, or ways within the city.

(2) "Park trees" are herein defined as trees, shrubs, bushes, and all other woody vegetation in public parks having individual names, and all areas owned by the city, or to which the public has free access as a park. (1972 Code, § 1-1604)

2-305. Street tree species to be planted. The following list constitutes the street tree species for Norris. No species other than those included in this list may be planted as street trees without written permission of the tree commission.

<u>Large Trees</u>	<u>Medium Trees</u>	<u>Small Trees</u>
Tulip Poplar	Red Maple	Flowering Dogwood
Sugar Maple	Norway Maple	Eastern Redbud
Red Oak	Willow Oak	Flowering Crabapple
White Oak	Ginkgo (Male Only)	Hawthorn
Pin Oak	Sawtooth	American Holly
Hemlock		Bradford Pear
Eastern White Pine		
Southern Magnolia		
Sweetgum		

(1972 Code, § 1-1605)

2-306. Spacing. The spacing of street trees will be in accordance with the three species size classes listed in § 2-305, and no trees may be planted closer together than the following: Small trees, twenty (20) feet; medium trees, thirty (30) feet; and large trees, forty (40) feet; except in special plantings designed or approved by the commission.

The distance trees may be planted from curbs or curb lines and sidewalks will be in accordance with three species size classes listed in § 2-305, and no trees may be planted closer to any curb or sidewalk than the following: Small trees, two (2) feet; medium trees, three (3) feet; and large trees, four (4) feet.

No street tree shall be planted closer than thirty-five (35) feet of any street corner, measured from the nearest intersection, curbs or curb lines. No street tree shall be planted closer than ten (10) feet of any fireplug.

No street trees other than those species listed as small trees in § 2-305 may be planted under or within ten (10) lateral feet of any underground water line, sewer line, transmission line or other utility. (1972 Code, § 1-1606)

2-307. Removal of stumps. All stumps of street and park trees shall be removed below the surface of the ground so that the top of the stump shall not project above the surface of the ground. (1972 Code, § 1-1607)

2-308. Cooperation with other segments of city government. Council stresses the desirability of cooperation between the tree commission and all other segments of city government and volunteer citizen groups. (1972 Code, § 1-1608)

CHAPTER 5

MISCELLANEOUS

SECTION

- 11-501. Curfew for minors.
- 11-502. Removal or injury of trees or other growth on public lands prohibited without prior authorization.
- 11-503. Removal of dead or dying trees on city rights-of-way and waiver of removal fee.
- 11-504. Off road vehicles.
- 11-505. Injuring, damaging, or stealing property.

11-501. Curfew for minors (1) Definition. The word "minor" as used in this section shall mean any person under the age of eighteen.

(2) Loitering of minors prohibited. It shall be unlawful for any minor to loiter, idle, wander, stroll, or play in or upon the public streets, highways, roads, alleys, parks, playgrounds or other public grounds, public places and public buildings, places of amusement and entertainment, vacant lots, or other unsupervised places, between the hours of 10:30 P.M. and 4:00 A.M. on Sunday, Monday, Tuesday, Wednesday, and Thursday of each week and between the hours of 12:00 midnight and 4:00 A.M. on Friday and Saturday of each week; provided, however, that the provisions of this section do not apply to a minor accompanied by his or her parent or guardian, or where the minor is upon an emergency errand or legitimate business directed by his or her parent or guardian.

(3) Responsibility of parents. It shall be unlawful for the parent or guardian of a minor to knowingly permit such minor to loiter, idle, wander, stroll, or play in or upon the public streets, highways, roads, alleys, parks, playgrounds, or other public grounds, public places, and public buildings, places of amusement, vacant lots, or other unsupervised places between the hours of 10:30 P.M. and 4:00 A.M. on Sunday, Monday, Tuesday, Wednesday, and Thursday, of each week and between the hours of 12:00 midnight and 4:00 A.M. on Friday and Saturday of each week, provided, however, that the provisions of this section do not apply when the minor is accompanied by his or her parent or guardian, or where the minor is upon an emergency errand or legitimate business directed by his or her parent or guardian.

(4) Penalties. Any minor under 18 years of age violating the provisions of subsection (2) shall be dealt with in accordance with juvenile court law and procedure. Any parent or guardian of a minor violating the provisions of subsection (3) shall be dealt with in the Norris City Court and may be fined under the general penalty clause for this code of ordinances. (1972 Code, § 10-209)

11-502. Removal or injury of trees or other growth on public lands prohibited without prior authorization.¹

It shall be unlawful for any person wantonly and unnecessarily to remove, cut, injure or destroy any tree, shrub, vine, moss or turf, growing or being located upon any public lands of any character whatsoever including all public parks, whether municipally owned or otherwise, watershed lands whether municipally owned or otherwise, "commons" or any other publicly owned open spaces and the entire right of way of all public highways, including state roads, county roads, and city streets without written authorization except as otherwise provided in this chapter.

(1) Care and removal of trees and other growth, generally. The city manager or his duly authorized representative shall be responsible for the planting, maintenance, and removal of trees or other growth in any public way or place in the city.

Owners of property are hereby granted the right to maintain, trim, spray, prune, or remove trees (up to six (6) inches in diameter measured at the stump eight (8) inches above the ground) or other growth in right of ways, on all public highways, including state roads, county roads, and city streets adjacent to their property.

(2) Authorization methods for the removal of trees or other growth on public lands.

(a) The removal of trees or other growth on watershed lands shall be as provided in § 5-103 of the Norris Municipal Code "Procedure for Sale of Forest Products" and in accordance with the provisions of the "Norris Watershed Firewood Cutting Permit" as set out in this section:

Permit No. _____

"NORRIS WATERSHED FIREWOOD CUTTING PERMIT"

Issued to _____ Address _____

Date Issued _____ Date of Expiration _____

This is not a timber sale, but is a permit to remove tops and slash from lumbering operations, naturally downed timber, or timber otherwise designated by the Watershed Board for use as firewood.

The above named party is hereby permitted to remove firewood from the city watershed area subject to the regulations set forth below:

- (i) No standing trees, either dead or alive shall be felled by the permit holder except in limited areas marked, announced

¹Municipal code reference
 Procedure for sale of forest products: § 5-103.

and controlled by the Watershed Board except as otherwise provided in this section.

(ii) Trees or logs are occasionally felled across obsolete logging trails, roads and ditches for purposes of closing or repairing such areas. Such placed wood shall not be removed for firewood.

(iii) Hauling shall not be done when roads are soft or muddy so as to cause wheel ruts or damage to roads or water bars.

(iv) The city manager shall be responsible for the issuance of permits for firewood cutting.

(v) Firewood cutting permits are issued to residents or property owners of Norris and employees of the city. The city manager may authorize the issuance of permits to owners of property that borders watershed property when it is deemed in the best interest of the city.

(vi) Eligible permit holders who are not physically able to cut their own firewood may designate a representative by letter attached to their permit. However, wood harvested by the representative must be for the exclusive use of the permit holder.

(vii) Removal of firewood for the purpose of resale is specifically prohibited.

(viii) Individual trees with wind, fire, lightning or other damage can be cut only by special written permission of the city manager. Application for permission to cut individual trees must be made directly to the city manager or his duly authorized representative.

(ix) Open fires are prohibited.

(x) Conviction for violation of firewood cutting regulations shall be automatic grounds for revocation of a firewood cutting permit. The city manager shall have the authority to deny a firewood cutting permit to anyone convicted of violating the firewood cutting regulations.

(b) Any person desiring to remove trees or other growth from any public way or place other than watershed lands shall make written application to the city manager or his duly authorized representative for a permit to do so. The applicant shall set forth the act intended to be done, the number, kind and location of trees or other growth to be affected, the proposed manner of doing the act and such other information as the city manager or his duly authorized representative may require.

The permit shall be issued by the city manager or his duly authorized representative if the proposed act and the proposed method is satisfactory. The city manager or his duly authorized representative may issue comprehensive permits to any public utility, in accordance

with this section, to be valid for the fiscal year during which the permit is issued. If a permit is denied, a written denial shall be given to the applicant setting forth the reasons therefor. Any work undertaken by the permittee or his agent may be stopped immediately and the permittee's permit may be revoked by presentation of a written order of revocation of the permit by the city manager or his duly authorized representative, when, in his opinion, the work or conditions outlined in the permit are not being complied with.

(3) Point of inspection. The city manager or his duly authorized representative may inspect any tree or other growth on private property in the city to determine whether the same or any portion thereof is in such a condition as to constitute a public nuisance and in addition for the purpose of abating or correcting any condition or thing declared to be a public nuisance under this chapter.

(4) Public nuisance-certain conditions designated. The following are declared public nuisances:

(a) Any tree or other growth or part thereof growing upon private property but weakening the street or walk or interfering the use of any street or walk which in the opinion of the city manager or his duly authorized representative endangers the life, health, safety, or property of the public.

(b) A tree or any other growth which does interfere with, impair, or destroy any street improvement, sidewalks, curb, gutter, sewer, or other public improvement.

(c) The continued existence of any tree or other growth on private property within the city that is infested or infected with insects, mites, fungus, bacteria, virus, or growth which constitutes a threat or may be injurious to trees or other growth in the surrounding area.

(5) Abatement. The city manager or his duly authorized representative shall in writing notify the owner of the property on which a public nuisance exists describing the nuisance and stating the work necessary to remove the same. If the owner of the property does not correct or remove such nuisance within ten days after receipt of said written notice the city manager or his duly authorized representative shall cause the nuisance to be corrected or removed and the cost shall be assessed to such owner.

(6) Permit fees. The following schedule of permit fees shall be applicable:

Watershed Firewood Cutting Permit
\$10.00 per fiscal year

Removal Permit
\$5.00 per act

Comprehensive Utility Permit

\$15.00 per fiscal year
(1972 Code, § 10-212)

11-503. Removal of dead or dying trees on city rights-of-way and waiver of removal fee. The adjacent landowner shall be given first refusal on removal of dead or dying trees for his own use upon payment of the removal fee. Special consideration on an individual basis will be given for necessary multiple removal of dead or dying trees.

If it is in the best interest of the city that the tree be removed, the city manager can waive the removal fee.

The city manager and director of public works shall determine, on an individual basis, if for reasons of safety, the city shall fell the tree and clear the roadway. The timing of the felling shall be coordinated, if possible, with the person who has paid the cutting fee and such person will have fifteen (15) days to clean up the right-of-way. (1972 Code, § 10-213)

11-504. Off road vehicles. It shall be unlawful for any unauthorized person to operate any all terrain or off road vehicles on any public lands, right of ways, watershed lands, or other public property within the corporate limits of the City of Norris. All all-terrain or off road vehicles for the purpose of this section shall be defined by Tennessee Code Annotated, § 55-3-101 and shall specifically include but not be limited to three and four wheelers, dirt bikes, dune buggies, snow mobiles, or unlicensed motor driven vehicles. (1972 Code, § 10-214)

11-505. Injuring, damaging, or stealing property. (1) Public property. No person shall injure, mar, or deface any public building, sidewalk, street, or other public property within the City of Norris; nor shall any person knowingly be in possession of any property of the city without lawful authority; and the fact that such property is marked as property of the city shall be prima facie proof of the knowledge that such property is that of the city.

(2) Private property. No person shall wantonly destroy or injure, or take, steal, and carry away or attempt to take, steal, and carry away any property belonging to any citizen or anyone else within the City of Norris. (1972 Code, § 10-202)

Title 14. Planning and Zoning

Chapter 4. Supplementary Provisions Applying to All Districts

cover sufficient to restrain erosion must be planted or otherwise provided within thirty (30) working days on that portion of the tract upon which further active construction is not being undertaken. Periodic or intermittent land disturbing activity does not preclude the intent of this section. Activity must be of a weekly nature.

- b. On angled or graded slopes constant efforts must be undertaken to restrain erosion during and after excavation.

6. Drainage/Runoff.

- a. No land disturbing activity shall be permitted in proximity to a lake or any watercourse or drainage way unless:
 - i. A buffer zone is provided along the margin of the watercourse of sufficient width to confine visible siltation or sediment deposit;
 - ii. A sufficient drainage and/or a runoff plan has been submitted to the building inspector and approval received. This approval is contingent on the plans intent on preserving the character of the land, and preserving the drainage course.
- b. Any land disturbing activity shall be so conducted to eliminate unnecessary runoff and/or drainage into properties or public rights-of-way.

14-417. Standards for Buffer Zones. *[Deleted by Ordinance #498]*

14-417. Standards for Buffer Zones. *[Added by Ordinance #498]*

- 1. **Buffer Zones for Residential Protection:** These buffer zones are intended to preserve the quality of life for the residents of Norris by protecting residential properties from excessive noise and from visual blight. The following standards shall apply to all industrial or commercial properties adjacent to zoning districts allowing residential uses. A buffer zone shall be provided on all commercial and industrial properties which are adjacent to zoning districts allowing residential uses. The buffer shall conform to the following specifications:

- a. **Width.** The designated area shall be not less than fifteen (15) feet for commercial and twenty (20) feet for industrial properties.
- b. **Length.** The buffer zone shall extend the length of the adjacent residential lot lines.
- c. **Design.** A suitable design plan, incorporating berms, vegetation, or a combination, shall be provided to adequately screen the adjacent property.
- d. **Location.** The buffer zone shall be located along the property line(s) adjacent to residential districts.

- e. **Restriction of use.** No structure, storage or similar activities shall be permitted within the buffer area.

2. **Buffer Zones for Norris' Highway 61 Periphery:** These buffer zones are intended to protect the natural barrier created by the hill that is visible from Highway 61, East of Norris Road, and whose ridgeline is approximately parallel to highway 61. The following standards shall apply to all properties which front on the North side of Highway 61, East of East Norris Road, whose rear property lines follow the approximate ridgeline of the hill, and to all properties which front on Dairy Pond Road, whose rear property lines follow the approximate ridgeline of the hill and ending at the city limit, regardless of their zoning designation:

- a. **Location.** The buffer zone shall be located along the rear property line.
- b. **Length.** The buffer zone shall extend the length of the rear property line.
- c. **Width for Residential Properties:** The width of the buffer zones shall be 25', measured from the rear property line.
- d. **Width for Non-Residential properties:** The width of the buffer zone shall be 50', measured from the rear property line. No buildings shall be located within 25' of the buffer zone, for a total setback of 75' from the rear property line.
- e. **Design for Residential Properties:** Residential properties shall not remove any healthy trees over 2" caliper in the designated buffer area. Residential properties are not required to landscape the required buffer zone.
- f. **Design for Non-Residential Properties:** A suitable design plan, incorporating berms, vegetation, or a combination, shall be provided to adequately screen the adjacent property. All existing healthy trees 2" caliper and greater shall not be removed.
- g. **Restriction of use.** No structure, storage or similar activities shall be permitted within the buffer area.

14-418. Site Plan Review. All persons, businesses, or organizations applying for a building permit must first submit eight (8) copies of a site plan for all commercial, multi-family and industrial developments. A permit will not be issued unless a plan is submitted and approval from the Norris Municipal Planning Commission is given to the building inspector. Site plans shall be submitted at least seven (7) days prior to a planning commission meeting for inclusion on the meeting's agenda.

- 1. All site plans shall show the following:
 - a. The site location of the proposed use/structure including a location map and the scale of such map.

14-420. Landscape and Screening Requirements.

1. **Scope.** This section shall be known as the Landscape and Screening Requirements. Landscaping requirements shall apply to any new commercial, industrial or multi-family (3 or more units) residential developments.
2. **General Requirements.**
 - a. Landscaping shall be integrated into the site with particular emphasis on parking areas and building facades. The general intent is to reduce the visual and environmental impacts of new developments on the community. Parking areas shall be visually screened from all roads and adjacent properties with plant materials (appropriate for the region) landscaped earthen berms, or any combination, to a height of three (3) to four (4) feet. Plant material selected shall be capable of obtaining the desired height and density within two years of planting.
 - b. **Buffer Requirements**
 - i. Lots under one half (1/2) acre: a buffer area ten (10) feet in depth and extending the entire frontage along a public road shall be reserved for landscaping purposes. A five (5) foot buffer area shall be required along other property lines.
 - ii. Lots of one-half (1/2) acre or more: a buffer area fifteen (15) feet in depth and extending the entire frontage along a public road shall be reserved for landscaping purposes. A ten (10) foot buffer area shall be required along all other property lines.
 - c. Landscaped islands containing a minimum of 120 sq. ft. shall be strategically located within the parking areas. No island shall exceed 240 square feet in area. At least one island shall be required in any parking area containing twelve (12) or more parking spaces. Within any such parking area, an average of ten (10) square feet of landscaped island area shall be required per parking space. Islands shall contain a minimum of one (1) deciduous tree per 120 square feet of island area, with each tree having a minimum caliper of three (3) inches and a height of eight (8) feet.
 - d. Landscaping shall be required for open space areas. One deciduous tree with a minimum 2" caliper and six (6) feet in height shall be planted for each four thousand (4,000) sq. ft. of open space. Each existing minimum 2" caliper tree preserved shall be counted as credit for two (2) new trees required if said trees are within the area of construction. Evergreen shrubs, a minimum of eighteen (18) inches in height shall be designed into the entire site at a rate of 35 shrubs/acre or fraction thereof of the entire site.
 - e. Landscaping shall include trees, shrubs, ground cover, perennials, and annuals that respect the natural resources of the site.

Appendix C. Priority Invasive Plants

Common Name	Scientific Name
<u>Trees</u>	
Bradford (Callery) pear	<i>Pyrus calleryana</i>
Tree-of-heaven	<i>Ailanthus altissima</i>
Princess tree	<i>Paulownia tomentosa</i>
Mimosa	<i>Albizia julibrissin</i>
<u>Shrubs</u>	
Burning bush	<i>Euonymus alatus</i>
Privet	<i>Ligustrum</i> spp.
Bush honeysuckle	<i>Lonicera maackii</i> , <i>L. morrowii</i> , <i>L. tartarica</i> , <i>L. x bella</i>
Autumn olive	<i>Elaeagnus umbellata</i>
Thorny olive	<i>Elaeagnus pungens</i>
Multiflora rose	<i>Rosa multiflora</i>
Leatherleaf mahonia	<i>Mahonia bealei</i>
<u>Vines</u>	
Oriental bittersweet	<i>Celastrus orbiculatus</i>
English ivy	<i>Hedera helix</i>
Winter creeper	<i>Euonymus hederaceus</i> (a.k.a. <i>E. fortunei</i>)
Kudzu	<i>Pueraria montana</i> var. <i>lobata</i>
Wisteria	<i>Wisteria sinensis</i> , <i>W. floribunda</i>

Appendix D. Results of 2021 Public Opinion Survey

The survey consisted of nine multiple-choice questions and one open-ended question. Four of the multiple-choice questions allowed respondents to select “Other” and write in answers. Two of the multiple-choice questions were on demographics and asked whether the respondent lived or worked in Norris and owned or rented their home. The survey was available online through SurveyMonkey.com from April 15 through May 15, 2021. Paper copies of the survey were available at the Norris city office and were distributed in town center on Saturday, May 8. The survey was advertised on the Norris Tree Commission Facebook page, in notices in the *Norris Bulletin*, and in a poster at town center.

A total of 105 survey responses were received, with 64 people completing the online survey form and 41 completing the paper survey form. The answers to the multiple choice survey questions are listed below.

1) Trees provide many benefits to our community. Please select the three benefits that are most important to you.

- Improve the quality of life and help define the character of Norris 68%
- Provide wildlife habitat 51%
- Provide shade, cool their surroundings, and reduce energy use 47%
- Protect water quality, reduce erosion, and reduce stormwater runoff 40%

2) Trees on city property, including street trees, can cause problems. Please select the three problems that are most important to you.

- Sidewalk and pavement damage 58%
- Safety problems with fallen trees and limbs 45%
- Tree roots impacting underground pipelines 45%
- Blocking road visibility, traffic, sidewalks, and signs 40%

3) Which of the following most closely describes your opinion on the prevalence of trees in the city (excluding the Norris Watershed)?

- There should be more tree canopy coverage 40%
- The current tree canopy coverage is satisfactory 60%
- There should be less tree canopy coverage 0%

4) Over the last decade, how has the health and quality of trees on city property, including right-of-ways, changed:

- Improved 28%
- Stayed the same 27%
- Declined 21%
- Unsure 25%

5) How do you rate the overall care and maintenance of trees on city property, including right-of-ways?

- Very good 37%
- Good 51%
- Fair, poor, or very poor 13%

6) Which of the following are the most important critical needs for trees on city property? Please select the top two.

- Increased preparedness for invasive pests (such as the spotted lanternfly and Asian long-horned beetle) and climate change 54%
- Increased budget for tree maintenance and care 49%
- More community education about trees 31%
- Better maintenance and care 21%

7) What actions are you willing to take to maintain and protect trees for future generations? Please check all that apply.

- Support the city dedicating more funding to maintain and enhance trees in Norris 70%
- Plant new trees on my property 53%
- Support a revision of the Norris Municipal Code to provide more protection of trees 41%
- Volunteer to plant and maintain trees on city property 39%

8) Do you live or work in Norris? Select all that apply.

- Live in Norris 88%
- Work in Norris 20%
- Own a business in Norris 7%
- Regularly visit Norris, but do not live, work, or own a business in Norris 6%

9) Do you own or rent your residence?

- Own 84%
- Rent 9%
- Other 2%
- Prefer not to answer 2%

The final part of the survey requested respondents to enter their comments or suggestions to guide the development of the urban forest management plan. Forty-tree respondents entered comments which ranged from general support to specific suggestions on tree management.