

Caring for Your New Tree

Mulch is valuable to your trees health and care. It insulates the soil from extreme temperatures, retains moisture, prohibits weed growth, prevents soil compaction and reduces lawn mower damage. Pour natural mulch such as wood chips or bark pieces two to four inches deep within a circle around the base of the tree.



Tree watering is a key part of tree care. A few rules of thumb will help you water your new tree properly. The city will water your new tree immediately after it is planted.

During the first two growing seasons, your new tree is expending energy trying to establish a good root system. Watering and mulching are particularly important during this period. Deep watering, or keeping the soil moist to a level that will include all roots, will help establish a good root system.



Over watering can be as harmful to the tree as lack of water. The soil should be moist, not soggy. Usually 30 seconds with a steady stream of water from a garden hose with a diffuser nozzle per tree is sufficient. After the second year, the trees root system should be well established ensuring it can survive on its own.

Light pruning and the removal of dead wood can be done anytime. Pruning during dormancy (winter) is the most common practice and results in a vigorous burst of new growth in the spring. Wait until the coldest part of winter has passed.



To slow the growth of branches you don't want, pruning should be done soon after seasonal growth is complete (summer pruning). This is also the time to prune for corrective purposes.

Do NOT prune in the fall. Decay fungi spread their spores at this time when the healing of wounds on trees is slower, increasing the risk of damage to the tree.

For more information on annual tree pruning steps from planting to maturity, please visit the National Arbor Day Foundations website at:

www.arboday.org/trees/tips/annualPruning.cfm

How to Identify Pest & Disease Problems

To properly diagnose a pest or disease problem contact the Missouri Department of Conservation (MDC) office in your area. They can assist you with most inquiries about tree care and local conditions. The Rolla area MDC office can be reached at (573) 368-2225.



Tree care tips courtesy National Arbor Day Foundation (www.arboday.org)



Emerald Ash Borer Kills Ash Trees

Call 866-716-9974 if you see one!

The non-native emerald ash borer (EAB) has been responsible for the destruction of millions of ash trees since the 1990s and has taken up residence in Missouri. If left unchecked, this harmless looking beetle will destroy Missouri's ash trees. There are three easy steps you can take to deter the spread of the EAB:

1. Do not move firewood: if you burn firewood, cut your own or purchase locally (cut within 50 miles). Do NOT move wood from place to place.
2. Do not plant ash trees, the EAB's sole source of food. No food...no EAB.
3. Learn to identify an EAB before you call. For more information on infestation symptoms and frequently asked questions, visit the Missouri Department of conservation website at www.mdc.mo.gov.

REFOREST ROLLA



Renewing the environment...
One tree at a time.



The City of Rolla enacted a tree management plan for its municipal tree forest with the passage of a city ordinance in 2019 and the creation of a Tree Board. As an offshoot of requirements for the city's Municipal Separate Storm Sewer System permit, the city has chosen to begin a program entitled "Reforest Rolla". The program will serve two purposes: it will eventually lead to a comprehensive management plan to preserve and care for our tree resources, and will reduce the amount of storm water runoff and erosion by "recycling" rainfall through absorption and evapotranspiration. When instituted, the program will consist of the adoption of a tree management ordinance, the development of the "Reforest Rolla Commission", the planting of, at a minimum, 500 trees per year to be purchased utilizing city funds, a citywide tree inventory, and eventual recognition as a Tree City USA. Utilizing funds from a Tree Resource Improvement and Maintenance (TRIM)¹ grant program, the city has developed this informational brochure to educate the citizens of Rolla on the Reforest Rolla program as well as the benefits of trees.

Most people are aware of some of the obvious benefits of trees. We all enjoy their beauty throughout the year. Who doesn't love the profusion of flowers in early spring or the comfort of a nice shade tree on a hot summer's day? Trees also serve as a habitat and food source for wildlife and increase property value. But did you know that trees are nature's oldest environmental stewards. They serve as an air conditioner without all the refrigerants, a truly green air filter, a natural water filter, and the ultimate erosion control system.



Trees are the most energy efficient heating and cooling system on the market. Proper landscaping with trees can save money throughout the year. The U.S. Department of Energy estimated that planting three trees in the proper location could potentially save the average household between \$100 and \$250 in energy costs annually. The air temperature directly beneath a tree canopy can be as much as 25 degrees cooler than surrounding temperatures. The reduced temperature is a result of transpiring water and shading of the surface. Hot air rises, cool air settles near the ground. In winter, this same tree serves as natural windbreak, shielding your house from the wind.

Trees are natural air filters and one of the most effective ways of removing carbon dioxide (CO₂) and other pollutants from the atmosphere. A single mature tree can absorb nearly 48 pounds of CO₂ annually and releases enough oxygen to support two human beings. And, because trees reduce the amount of air conditioning and heating, they reduce the amount of fossil fuels burned in the production of electricity. Over a 50 year lifetime, a single tree will generate \$31,250 worth of oxygen and provide \$62,000 worth of air pollution control.

In an age of stricter regulations for storm water pollution prevention, erosion control is of utmost concern. Trees absorb rainwater that would otherwise end up in the storm sewer and have their own system of deterring the erosive action of rain. Rainwater is captured on the leaves where it is slowed and held briefly, decreasing the rate at which it falls to the ground giving it more time to absorb. Once reaching the ground, it is absorbed by an extensive root system. From here, it eventually returns to the atmosphere through evapotranspiration. A study conducted by the U.S. Forest Service shows that a nine year old saturated tree, 28 foot tall with a 19 foot crown is capable of intercepting and slowing over 68% of a half inch rainfall. That's over 58 gallons of water. Over a 50 year lifetime, one tree can control approximately \$31,250 worth of soil erosion.

Trees intercept a significant amount of water during a rainfall event. Surface friction of the leaves slows the water enough to allow it time to soak into the root system of the tree. What isn't used by the tree percolates through the ground and is filtered along the way. The larger the tree, the larger the root system meaning the water absorption is spread to a larger extent. This process is particularly important in urban environments where the increase in impervious surfaces means an increase in pollutants, volume of runoff and velocity of the water. Trees reduce the volume of runoff and all of its negative impacts such as erosion, pollution and sediment.



The Reforest Rolla program will offer trees, free of charge, to homeowners within the corporate limits of Rolla. An individual may request more than one tree, however they will be only be planted one per year. Three types of trees are offered with three varieties of each; flowering trees, shade trees and "fall color" trees. The trees must be placed on public right-of-way unless a waiver is provided. The City of Rolla will provide and plant the trees twice a year, in the spring and fall, following an inspection of the desired planting location. Please note that availability of tree variety will depend on site conditions. The property owner will agree to adopt the tree for the first two years of its life, providing water, maintenance and required pruning. For those trees located in public right-of-way, should the tree die, the property owner may contact the city for a replacement. There is no limit on the number of trees a property owner may request, however the number planted will be based on space requirements. For more information, visit www.rollacity.org/reforest or email questions to reforest@rollacity.org.

Did you know it is possible to determine the benefits that one tree will provide in a year? Using the diameter of the tree trunk and your zip code, this tree benefits calculator will offer such information as gallons of stormwater intercepted, dollar increase to property value, number of kilowatts conserved per hour, air quality benefits and the amount of carbon dioxide "sequestered". Visit the National Tree Benefit Calculator at www.treebenefits.com/calculator to learn more about the many advantages of trees.

¹ Funding for this brochure was provided by a Tree Resource Improvement and Maintenance (TRIM) grant. This is a competitive cost-share program provided and administered by the Missouri Department of Conservation in cooperation with the Missouri Community Forestry Council and the U.S. Forest Service. It provides financial assistance for the management, improvement or conservation of our community forests.

Flowering Trees



Forest Pansy Redbud (*Cercis canadensis* 'Forest Pansy')
Excellent purplish-red foliage. Birds use for nesting; attracts butterflies.



Sweetbay Magnolia (*Magnolia virginiana*)
Blooms in mid-May and is extremely fragrant.



Japanese Tree Lilac (*Syringa reticulata* 'Ivory Silk')
Most trouble-free lilac. Extremely fragrant creamy-white flowers in June. Good street tree.

Shade Trees



Shademaster Honeylocust
(*Gleditsia triacanthos inermis* 'Shademaster')
Fast-growing, durable tree. Small leaflets cast light shade. Thornless with a symmetrical crown, produces fewer seed pods and is drought tolerant.



American Hophornbeam (*Ostrya virginiana*)
Moderate-sized shade tree with an elm-like leaf. Also known as ironwood. Birds use for nesting and cover.



Chinese Lacebark Elm (*Ulmus parvifolia*)
Lacebark elm is resistant to Dutch elm disease and has beautiful, mottled bark.

"Fall Color" Trees



October Glory Maple (*Acer rubrum* 'October Glory')
Fall color is orange to red



Black Gum (*Nyssa sylvatica*)
Also known as Black Tupelo. Spectacular fall colors. Fruit is loved by birds. Does not produce "gum balls".



Sugar Maple (*Acer saccharum*)
Displays a beautiful orange fall color.

Street Tree Application and Steward Agreement

City of Rolla Responsibility

The City of Rolla agrees to provide and install the following trees within city right-of-way free of charge. A representative from the city shall meet with the property owner to discuss available tree options based on existing conditions and utilities. Once a tree(s) has been selected, the city will ensure all underground utilities have been located; will deliver, plant and stake the tree; and provide the initial mulch. There is no limit on the number of trees a property owner may request. However, requests will be filled one tree per year.

Property Owner Responsibility

I agree to be a tree steward in the Reforest Rolla tree planting program for the approved tree(s). Tree stewardship entails watering, weeding, mulching, pruning, removing stakes after 1 year, keeping the tree well free of debris and monitoring the health of the new tree(s). I commit my services to this tree(s) for a period of two years from the planting date. I understand that failure to provide these services could result in the death of the tree(s). Should this occur, the city will NOT provide a replacement(s). If the tree has been properly cared for, the city will replace the tree free of charge. Maintenance responsibility can be voluntarily assumed by renters or added to a lease; **ONLY THE PROPERTY OWNER** may sign the Tree Application Agreement.

I acknowledge that the tree(s) provide(s) scenic and ecosystem values to the public; however, this public benefit does not give general access to the property listed below by the public at large. Furthermore, I, the owner of aforementioned property, do hereby indemnify and hold harmless the City of Rolla from any damages occurring on my property or personal injury as a result of Reforest Rolla activities.

Signature: _____ Date: _____

Address of proposed tree(s): _____

Name: _____

Address: _____

Phone: _____ Email: _____

Inspected by: _____

Tree(s) requested and number: _____

- Complete this section for off street planting requests only •

As the owner of the property located at _____ I give permission for the City of Rolla to enter my property for the purpose of planting a tree(s). The tree must be planted in a location visible from the street. I understand that once planted, the tree(s) is my private property with all the rights and responsibilities that entails. Should the tree(s) die, the city will NOT provide a replacement(s). I hereby declare that I will take full responsibility for any damages that might occur to underground utilities, over-head utilities, or personal property. Furthermore, I, the owner of aforementioned property, do hereby indemnify and hold harmless the City of Rolla from any damages occurring on my property or personal injury as a result of Reforest Rolla activities.

Signature: _____ Date: _____



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