

Guidelines for a Rural Residential Development Forest Management Plan

The purpose of the Rural Residential Development Forest Management Plan is to work with property owners to conceive a plan that best fits their needs while protecting and improving existing forest canopy and preserving the character of rural Fitchburg. It is recommended that a certified arborist or forester be hired to complete the plan. The essential elements of the plan are:

1. Provide a brief history of the property, for example: former ag land, former farm woodlot, previously grazed ag land, degraded oak savannah, etc.
2. Provide an overview description of the site/property to include:
 - a. Slope, aspect, size (acreage) and basic topography.
 - b. List the wildlife present.
 - c. Describe the current management practice.
 - d. Provide a context of the area:
 - i. Invasive species: what, how much, where
 - ii. Health and insect issues what, how much, where
 - iii. Rare or unusual plant or animal species present
 - e. Provide a tree inventory:
 - i. Species
 - ii. Size of everything over 6" DBH
 - iii. Identify significant trees
 - iv. Identify heritage oaks
3. Map/Aerial –
 - a. Provide a graphic that shows the desired location of improvements, buildings, structures, driveways, septic systems, wells, and landscaping
 - b. Provide locations of all significant and heritage trees.
 - c. Provide locations of significant trees whose critical root radius will be affected by construction activities.
4. Personal goals for property
 - a. Long term objectives: desired forest type and health management strategies
 - b. Description of management options
5. Provide a Tree Protection Plan following the Tree Protection and Pruning Guidelines attached

Woodland Cover (from Fitchburg's Rural Residential Development Criteria)

A Forestry Management Plan, approved by the City Forester, is required for improvements placed on wooded or partially wooded sites.

- Improvements are sited to have a minimal disruption to significant tree(s), and/or the critical root radius of significant tree(s).

E. Heritage Tree Protection

Heritage trees and their critical root radius shall be fully protected and remain undisturbed by establishing a protected root zone.

Definitions

Critical Root Radius (CRR)

The area of undisturbed soil around a tree, especially forest grown or columnar trees, that includes 90-95% of the tree's roots and is more accurate than the dripline method for determining the Protected Root Zone. The formula for determining the CRR is 1.5 feet of radius for each inch of DBH. For example: a 10 inch tree has a CRR of 15 feet (10 X 1.5 = 15).

dbh

Diameter at breast height. The standard diameter measurement of a standing tree at a height of 4.5 feet above ground level.

Forest Management Plan

The practical application of scientific, economic, and social principles to the administration and working of a forest for specified objectives. For sites on which there shall be construction activities, the Forest Management Plan shall include Tree Protection Plan component.

Heritage Tree

Trees that, because of their age, size, type, historical association or horticultural value, are of special importance to the City. Each candidate tree is assessed by a certified arborist and evaluated by a review committee. Upon recommendation of the Parks, Recreation, and Forestry Commission, the City Council may designate a tree as a Heritage Tree provided the tree's health, aerial space, and open ground area for the root system have been certified as sufficient.

Improvements

Defined as house, structures, septic systems, wells, and/or site improvements.

Partially Wooded

Sites that have greater than 50% tree canopy coverage are considered woodland or forest. Anything less than 50% tree canopy coverage would be considered partially wooded or oak savanna if the site consists primarily of oaks.

The site would be considered prairie if the understory herbaceous plants are undisturbed or restored native prairie plants and the oak canopy tree coverage is 10% or less.

These upper and lower limits are only approximate.

Protected Root Zone (PRZ)

An area surrounding a tree which should be isolated with a fence to restrict access and to avoid damage during construction activities. It includes the Critical Root Radius in which 90-95% of a tree's root system is found.

Significant Tree

Any living tree larger than 6" dbh that displays superior quality and characteristics when compared trees of the same species or other trees in the vicinity of the woodlot.

Tree Protection and Pruning Guidelines

The following guidelines are intended to aide the architect/developer/builder to plan for and execute the appropriate actions that will reduce the risk of injury and/or disease and improve the chances that those trees designated for preservation will survive and thrive.

1. A tree inventory must be completed to determine the genus/species, size and location and to assess the health and value of all trees on the site.
2. A protected root zone (PRZ) must be established for all trees designated for preservation to protect roots beyond the apparent drip line or the critical root radius. The PRZ will be a minimum distance from the trunk of 18 times the tree trunk diameter measured at 4.5 feet above the ground.
3. Chain link or comparable substantial fencing must be erected and maintained outside the PRZ. Visible "Off Limits" signs must be posted at 50-foot intervals along the fence. The following is prohibited within the PRZ:
 - a. grading and excavation except as shown
 - b. storage or parking of machinery, equipment or vehicles
 - c. storage, stockpiling, or dumping of construction materials, waste, refuse and excavated soils
 - d. runoff or spillage of noxious materials
 - e. ponding, erosion, or excessive wetting caused by dewatering operations
 - f. attachment of any object to tree branches or trunks.
4. Soils must not be stripped from or disturbed within the PRZs of those trees designated for preservation (except for the removal of competing trees or other plants) to prevent the removal of nutrients, microbes and create a disease conducive environment. If grade transitions are necessary near any tree designated for preservation a retaining wall must be built to reduce the horizontal distance for the grade rather than creating a slope from the natural to the finish grade.
5. Grade changes around trees designated for preservation must be carefully monitored and avoided. If a grade change is unavoidable arboricultural accepted soil aeration systems, consisting of tree well encircling the tree trunk to prevent fill from coming in contact with the base of the tree, load-bearing geotextile fabric covering the original surface, a horizontal grid system of perforated pipes connected together and vented to the tree well and the final fill surface, a layer of gravel fill surrounding the pipes and finally a second layer of geotextile fabric between the gravel and soil fill to prevent the layers from mixing.
6. All trees designated for preservation must be thoroughly watered and injection fertilized with a water soluble 10-6-6 fertilizer throughout the PRZs prior to pruning and prior to the removal of nearby trees to reduce the risk of stress and to enhance the recovery periods. Watering must continue throughout the growing season at a rate of 1 inch of water per week.
7. The PRZs must then be covered with 3"- 4" of shredded mulch or 4"- 6" of wood chips.

8. Protect and preserve soil surrounding PRZs for future tree planting. Apply a layer of wood chips at least six inches thick over areas that will be used for traffic or materials storage during construction. If these areas become part of the new landscape, the wood chips will prevent the soil from becoming too compacted.
9. All trees designated for preservation must be properly pruned of dead, diseased, or hazardous branches and selected live branches prior to the removal of nearby trees to reduce the risk of accidental injury during tree removal and construction. Wounds on live wood of all oaks must be dressed with an arboricultural wound dressing to prevent the spread of oak wilt. Only apply wound dressing to oaks and elms; do not dress the wounds of other species. **Do not prune live wood on any oaks between April 1st and October 15th.**
10. All trees tagged for removal that are within the PRZ of a tree designated for preservation must be removed with chainsaw and stump grinder rather than being bulldozed to avoid damaging the roots, trunks and limbs of the tree(s) designated for preservation.
11. Any roots that must be severed within the PRZs must be cut with sharp, clean root cutting equipment. The roots must be cut cleanly avoiding any ripping or tearing – do not tear, break, or chop roots. Cover exposed roots within one hour with soil, mulch, or damp burlap.
12. Avoid trenching where underground utilities are required within the PRZ. Tunnel under or around roots by drilling, auger boring, directional drilling, pipe jacking, or digging by hand.
13. All paved areas and foundations must be located outside of the PRZs of trees designated for preservation. In the case of exceptions, any tree designated for preservation whose PRZ is encroached by pavement or a foundation must be protected by a root barrier to prevent damage to the pavement or foundation and to protect the health of the tree.
14. Any PRZ that suffers compaction due to construction or the operation of heavy equipment must be ameliorated with a deep-water aeration system.
15. When construction is completed all preserved trees must be thoroughly watered and the mulch should be retained to cover the PRZs at a depth of 3"- 4".
16. A site inspection must be conducted prior to building starts to assess the health of preserved trees and to determine if wind throw hazards exist. A management plan must be developed and executed to mitigate any hazard or risk trees.