

Tree Protection:
Suggested Wording for Municipal Land Use Ordinances

Purpose.

The purpose of this section is to control and regulate indiscriminate or excessive removal, cutting, and destruction of trees, and to control, regulate, and prevent conditions which cause an increase in storm water runoff, sedimentation, soil erosion, reflected heat, air or noise pollution, or inhibit aquifer recharge. The regulations which follow are designed to limit such adverse impacts.

Exemptions.

The following tree cutting and tree removal activities shall be exempt, unless it is a specimen tree, from the provisions of this section:

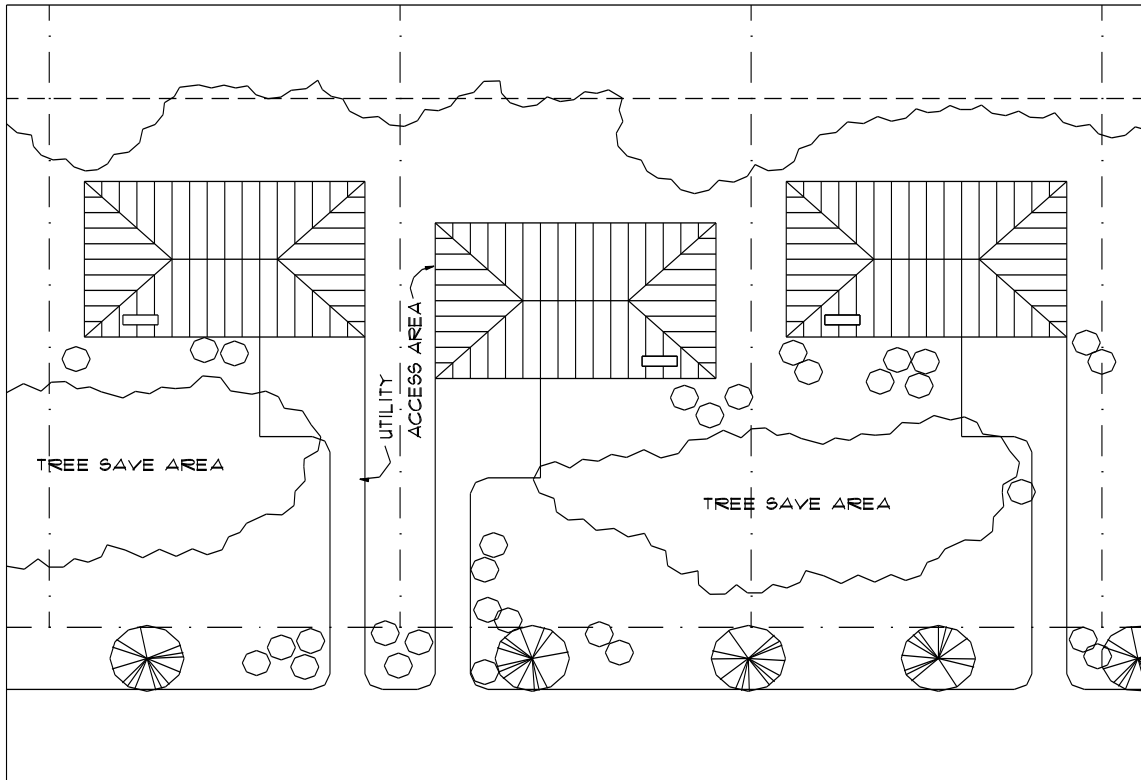
1. Individual lot owners may remove up to 5 trees of 8" or more in caliper in any one year period. There is no restriction on the number of trees removed less than 8" in caliper.
2. Any tree growing on property approved to operate as a nursery or garden center.
3. Any tree growing on property actively operated as a farm, which is removed to create fields for crops or forage and not sold for profit.
4. Trees which, in the opinion of the municipality, its employees or agents, constitute a threat to the health, safety or welfare of the general public.
5. Trees which, in the opinion of the municipality, its employees or agents, constitute a threat to biodiversity or habitat, as in the case of invasive species or trees infected with a transmittable disease such as bacterial leaf scorch, or invasive pest such as emerald ash borer.
6. Public or local utilities maintaining easements or rights-of-way in the normal course of business.
7. Communications companies regulated by the Federal Communications Commission maintaining communications lines and equipment.
8. Approved game management practice, as recommended by the State of New Jersey, Department of Environmental Protection, Division of Fish, Game and Wildlife.
9. Properties devoted to the practice of silviculture for which farmland assessment has been approved.

Tree Protection Zone.

Tree protection zones shall be established on all areas of a site contemplated for development; or, tree removal in the absence of an application for development. The tree protection zone shall be that area exclusive of buildings, parking, driveways, streets, storm water management facilities including swales, and utilities plus an additional width at the perimeter of such uses of land of 15 feet for a building and 10 feet for all other classes to permit appropriate grading. The intent is to create an area or areas in which trees shall be retained, planted initially, or are to be planted with replacement trees for

areas that have been cleared for site development. Special attention should be given to placing old growth or mature woodland into the tree protection zone. Utilities should be grouped into common easements to maximize tree save areas as illustrated in Figure 5.1.

Figure 5.1 Schematic Tree Save Areas and Location of Utilities.



1. Trees within tree protection zones shall be grouped into tree save areas wherein retaining all trees is required unless waived by the Board of Jurisdiction or by the Administrative Officer, as the case may be. For permits that do not require an application for major subdivision or major site plan, the Administrative Officer shall determine the adequacy of the management plan. The Administrative Officer may consult with the Environmental Resources Committee, Shade Tree Commission or appropriate professional staff in his or her decision.
2. Tree protection zones and any tree save area within such zone for individual single family detached lots not subject to major subdivision approval shall be delineated on a plot plan or lot grading plan in order to determine compliance with this section.

Standards for Tree Retention.

The following standards shall apply to all trees regardless of location:

1. Existing trees on a site contemplated for development shall be retained to the greatest feasible extent.

2. In off-street parking areas and storm water management facilities, islands of trees shall be retained. These requirements shall not pertain to individual single family detached and two-family dwellings.
3. No paving of any impervious nature shall be placed within the dripline of any tree, and the grade shall be such that drainage of rainwater will water the root area without pooling or exceeding the requirements of the species. Excess water shall be admitted to a non-structural stormwater management system in the parking lot or drained by other means acceptable to the Municipal Engineer.
4. Any live tree which is substantially damaged as a result of grading or general construction shall be replaced in accordance with the tree replacement regulations. A tree shall be substantially damaged when one-half or more of the tree bark is destroyed below 4 feet or the trunk is girdled.
5. Any tree used in a required planting, or to replace a damaged tree, shall have a trunk or main stem which is at least 2.5 inches in caliper, unless the tree is used for storm water management facility plantings, and shall meet the specifications of the American Nurserymen's Association standards.
6. Existing trees are encouraged to be used for the required buffer zone of trees and shrubs.
7. Trees in the area between the street line and the setback line of the building shall be preserved to the greatest extent possible (see Figure 5.1).
8. Specimen trees shall not be removed unless seriously diseased or constitute a hazard to the general public.
9. No trees on public rights-of-way, parks, or public areas are to be removed by private individuals except as approved by the Administrative Officer or other officer designated by the governing body. The removal of trees shall not be permitted from a Master Plan right-of-way unless trees are dead, seriously diseased, or endanger life or property, or a letter of approval is obtained from the governing body or Administrative Officer. Conversely, no trees are to be planted on public rights-of-way without express approval granted as part of a site plan or subdivision application or by the Administrative Officer.

Tree Canopy and Replacement.

1. Each lot for which a major site plan application and approval shall have, after development, a minimum density of trees per acre of the gross area of the tract. The number of trees required to achieve the minimum density required shall be as set forth in this subsection. If a site initially lacks the sufficient density of trees required or if site clearing reduces the tree density to below the minimum required, the developer shall plant additional trees to meet the minimum. These trees are termed "replacement" trees regardless of whether they are for initial

planting to meet minimum requirements or for replanting after site clearing has occurred. Trees otherwise required to be planted for landscape buffer areas or parking lots, as the case may be, may be counted towards the required tree density. The planting of replacement trees shall be required under the following conditions:

- a) To establish the minimum tree density requirements for the site;
 - b) Where grading occurs in the tree protection zone;
 - c) If areas permitted to be cleared leave no tree protection zone;
 - d) If no trees are present within the tree protection zone.
 - e) Where specimen trees outside the tree protection zone are to be removed;
 - f) Where trees are illegally removed or irreparably damaged during the construction process.
 - g) All trees shall be native and planted in accordance with American Nurseryman's Association standards.
 - h) Replacement trees shall be canopy trees as planting area permits but smaller understory trees may also be used when limited planting area is presented.
2. The quantity of replacement trees shall be sufficient to produce a total Required Tree Density (RDS) of at least 15 units per acre as described herein. Units shall be determined based on the conversion factors in Tables 5.19, 5.20 and 5.21.
 3. The spacing of replacement trees shall be compatible with area limitations and the characteristics of the species that are planted.
 4. When the Administrative Officer or designee has determined that area constraints result in an absolute inability to provide the required tree density, as many trees as possible shall be planted on the site. The remaining balance of trees shall be provided in the form of payment of 80% of the Bond Estimates for the trees and shall be placed in a shade tree account.

I. Calculations for RTD. Calculations for determining the Required Tree Density (RTD) are as follows:

Step 1. Required Tree Density shall be calculated by multiplying the factor of 15 by the gross tract area.

EXAMPLE: 2 acre site has a RTD of 30 ($2 \times 15 = 30$)

Step 2. The Existing Tree Density (ETD) of the trees that are to remain within the tree save area of the tree protection zone shall be calculated by converting the caliper from the tree survey (see paragraph -D.4 and -D.6 above) to tree density units as indicated in Table 5.19.

EXAMPLE: The tree survey identifies 15 trees that will remain on the site in the Step 1 example after development, as follows:

- 7 - 12" locusts
- 3 - 14" maples
- 3 - 18" oaks
- 1 - 20" oak
- 1 - 30" sycamore

Converting the caliper to tree density units yields the following values:

<u>Caliper</u>	<u>Density Units</u>		<u>No. Trees</u>	=	<u>ETD</u>
12"	.8	x	7	=	5.6
14"	1.1	x	3	=	3.3
18"	1.8	x	3	=	5.4
20"	2.2	x	1	=	2.2
30"	4.9	x	1	=	4.9
			Total	=	21.4

This total represents the Existing Tree Density on site.

Step 3. Calculation of the replacement trees is determined by subtracting the Existing Tree Density from the Required Tree Density.

EXAMPLE: RTD-ETD = replacement tree units

or

$$30 - 21.4 = 8.6 \text{ replacement tree units}$$

Table 5.19 Conversion of Caliper to Tree Density Units for Existing Trees.

[Ord. 1585-99, 9/7/1999]

Caliper (inches)	Density Units	Caliper (inches)	Density Units	Caliper (inches)	Density Units
8-9	.5	27	4.0	45	11.0
10	.6	28	4.3	46	11.5
11	.7	29	4.6	47	12.0
12	.8	30	4.9	48	12.6
13	.9	31	5.2	49	13.2
14	1.1	32	5.6	50	13.8
15	1.2	33	5.9	51	14.4
16	1.4	34	6.3	52	15.1
17	1.6	35	6.7	53	15.8
18	1.8	36	7.1	54	16.5
19	2.0	37	7.5	55	17.2
20	2.2	38	7.9	56	18.0
21	2.4	39	8.3	57	18.8
22	2.6	40	8.7	58	19.6
23	2.9	41	9.1	59	20.2
24	3.1	42	9.5	60+	21.0
25	3.4	43	10.0		
26	3.7	44	10.5		

Step 4. The number of replacement trees that would need to be planted, if any, is determined by converting the replacement tree units to caliper inches or tree height based on Tables 5.20 and 5.21. Any number or combination of trees that meets the minimum required for replacement may be used; however, coniferous evergreens shall be limited to no more than 40% of the total required replacement trees.

EXAMPLE: 10 – 3" red oaks = 6.0 tree units; 2 – 4" sycamores = 1.4 tree units; and 3 – 2" river birch = 1.5 tree units for a total of 8.9. Since 8.9 is greater than 8.6, the minimum replacement trees requirement has been met.