Drafted by the Pioneer Valley Planning Commission –
Passed at a Meeting of the Planning Board, 04-04-05

Section 8.00 Required Improvements for Subdivision and Development of More than One Building for Dwellings Purposes per Lot

** To replace existing text in Section 8.09. Please delete existing text and replace with the following:*

Section 8.09 Trees and Plantings

Section A: Preamble

The Town of Granby finds that mature trees have aesthetic appeal, contribute to the distinct character of the community, improve air quality, provide glare and heat protection, reduce noise, aid in the stabilization of soil, provide natural flood-and-climate control, create habitats for wildlife, enhance property values and provide natural privacy to neighbors.

Section B: Intent and Purpose

The purpose of this bylaw is: to protect the critical identified forested areas in Granby from deforestation; to preserve trees in order to prevent erosion on disturbed areas and control stormwater drainage; and to protect the forested and rural character of Granby.

Section C: Definitions

CALIPER: Diameter of a tree trunk (in inches) measured 6 inches above the ground for tree up to and including 4-inch diameter, and 12 inches above the ground for larger trees.

CLEAR-CUTTING: The removal of sixty-five (65%) of mature trees, to be determined by the Tree Warden and/or Planning Board based on species and soil conditions.

DBH (Diameter at Breast Height): The diameter (in inches) of the trunk of a tree (or, for multiple trunk trees, the aggregate diameters of the multiple trunks) measured 4 ½ feet from the existing grade at the base of the tree.

SIGNIFICANT TREE: Any living, healthy tree measuring 14 inches DBH or greater, or to be determined by the Planning Board or Tree Warden based on species and soil condition.

WOODED LOTS: An area or stand of trees whose total combined canopy covers at least 50% of the lot

Section D: Tree Preservation

1. The landscape shall be preserved in its natural state insofar as practical by minimizing tree removal, except in connection with a property used for tree farming. If established forested areas are to be cleared, special attention shall be given to the planting of replacement trees. Land should not be clear-cut for the sole purpose of offering land for sale.

2. Every effort shall be made through the design, layout, and construction of a subdivision to save as many existing, mature trees as possible. Accordingly, the subdivider shall institute alternative site design methods to assure the best chance of tree survival whenever the following criteria cannot be adhered to. The following is a list of recommended measures for the protection of existing trees:

a. There should be no operation of heavy equipment or storage of any materials under said tree within its natural drip line.

b. Wherever possible, no grading or filling should be done within the drip line.

c. No black top paving or vehicle parking should be located under evergreen trees.

d. No more than twenty (20) percent of the area under any deciduous trees natural drop line may be paved.

e. All drainage from paved areas should be directed away from root zones.

3. On wooded lots, subdividers are required to submit a Tree Preservation Plan for within the limits of the proposed construction activity. The Plan must be prepared by a registered landscape architect or forester. The Tree Preservation Plan must include a scaled Site Plan including the following information:

a. A tree inventory indicating the size, species, location, and condition of all significant trees within the limits of the proposed activity; also location of existing and proposed structures, improvements, utilities, and existing and proposed contours.

b. Specific protection techniques and disease control, if applicable, that will be utilized to minimize disturbance to all trees remaining on site.

c. A reforestation plan indicating size, species, location, and planting specifications of all street trees, yard trees, and replacement trees. The reforestation plan shall utilize a diversity of tree species with emphasis on native species when possible.

d. Selection of replacement trees in regard to their number, size and species, shall be determined by the Planning Board upon recommendation of the Tree Warden, on the basis of an analysis of tree canopy conditions, soil conditions, and other relevant factors.

E. Street Trees

1. The subdivider is required to plant suitable broad-leaved deciduous shade trees along all streets. Said trees shall be located within the street right-of-way unless the Planning Board has approved otherwise. All trees shall be the equivalent of well rooted nursery grown stock, free of injury, harmful insects, and diseases. They shall be well branched and the branching structure should be sound and not interfere with traffic visibility. In certain cases, where the subdivider's Tree Preservation Plan demonstrates, to the satisfaction of the Planning Board, that suitable trees will be retained within the right-of-way, the Board may waive a portion of all the required street trees.

2. The subdivider shall install street trees as follows:

a. In order to provide a mature tree canopy in the future, the distance between trees shall not exceed approximately 30 feet along the way. The Planning Board may grant an amendment on this requirement based on tree species and soil conditions.

b. Minimum height and DBH of all trees to be planted is at the discretion of the Planning Board, based on tree species and soil conditions.

c. Supplemental irrigation should be provided to all trees as needed during the summer months to ensure healthy maintenance.

d. The species and variety of the trees to be planted shall be species listed on the Preferred Tree List (See Attachment A).

e. No evergreen trees such as pine, fir, spruce or hemlock shall be planted as public shade trees along the way.

f. No trees or shrubs shall be planted at any corner or intersection where they could become a traffic hazard by obstructing vision or preventing safe vehicular travel.

g. All cut bankings that tend to wash or erode shall be planted with a low growing evergreen shrub and seeded with a deep rooted perennial grass or groundcover to prevent erosion.

h. In a subdivision, the subdivider will be liable for all planted trees as to their erectness and good health for two calendar years after planting as determined by the Tree Warden.

F. Tree Replacement

1. The subdivider shall provide replacement trees on each lot to ensure that at least 35% of the lot outside the footprint of the house and driveway will be shaded. Plans submitted to the Planning Board shall show the estimated tree canopies after 15 years of growth, the specific names, sizes and locations of trees to be planted, and the total area of square feet of the area shaded by tree canopies. In determining the shaded area, measure the shaded area assuming that the shaded area is only that area directly under the drip line (See Attachment B).

2. The Planning Board will have the discretion to modify tree shading requirements under power lines and other obstructions which prohibit strict compliance with shading requirements, and to give shading credit for off-site trees and sidewalk tree canopies, where appropriate.

2. Selection of replacement trees in regard to their number, size and species, shall be determined by the Planning Board upon recommendation of the Tree Warden, on the basis of an analysis of tree canopy conditions, soil conditions, and other relevant factors.

3. When possible, a diversity of trees shall be used, with a preference of species native to North America. Please see “List of Recommended Trees” (Attachment A) for preferred tree species.

4. Use of exotic plants, such as Norway Maple (Acer platanoides), Crimson King Norway Maple (Acer platanoides 'Crimson King'), Ailanthus (Ailanthus altissma), Amur Corktree (Phellodendron amurense), Rhamnus cathartica (Common Buckthorn) and Fragula alnus (Glossy Buckthorn) is prohibited.

5. The subdivider will be liable for all planted trees as to their erectness and good health for two calendar years after planting as determined by the Tree Warden.

G. Remediation

1. Any tree shown to be saved on the above mentioned Tree Preservation Plan which, however, is removed or whose survival is irredeemably jeopardized in violation of these conditions shall be replaced in a manner to be determined solely by the Planning Board on advice of the Tree Warden.

2. Failure by the subdivider to comply with these conditions expeditiously may result in the Planning Board to retain a cash bond, held in an interest bearing account by the Planning Board jointly with the subdivider for two years. Upon the completion of the above conditions, the applicant may request release of the funds, plus interest, retained by lender by sending a statement of completion and a request for release by registered mail to the Town Clerk and the Board.

H. Enforcement

1. The Tree Warden or any Planning Board member, or Board designee shall conduct periodic inspections of the site during land clearance and construction in order to ensure compliance with these conditions. Should the Conservation Administrator, Building Inspector, Town Engineer, Police Officer, or any other town official observe violations or possible violations of these conditions, such official shall immediately report same to the Tree Warden or the Town Planner.

ATTACHMENT A
LIST OF RECOMMENDED TREES
An asterisk * denotes a species native to North America. These should in general be preferred to non-native species, as they contribute to the local ecology in ways that exotic species can not.

Scientific Name	Common Name	Mature Height	Mature Canopy Spread	Growth Rate	Notes
Acer campestre	Hedge Maple	25′-40′	Equal spread	Slow	Handsome street tree
Acer ginnala	Amur Maple	15′-20′	Equal spread	Medium	Good fall color
Acer griseum	Paperbark Maple	25′-35′	Half or equal to height	Slow	Interesting Bark
*Acer rubrum**	Red Maple	50′-75′	Half or equal to height	Medium to Fast	Tolerates wet sites
*Acer saccharum**	Sugar Maple	60′-80′	40′-55′	Slow	Salt intolerant, vivid fall colors
*Amelanchier laevis**	Allegheny Serviceberry	15′-30′	Variable	Medium to Fast	4-season interest, edible berries
*Betula nigra**	River Birch	40′-75′	40′-60'	Medium to Fast	Cultivars
*Catalpa speciosa**	Catalpa	40′-60′	20′-40′	Medium to Fast	Large leaves, flowers & pods
*Celtis occidentalis**	Hackberry	40′-60′	Nearly equal to height	Medium to Fast	Attracts birds, good street tree
Ceridiphyllum japonicum	Katsura	40′-60′	Variable	Medium to Fast	Prefers moist ground
*Cercis Canadensis**	Eastern Redbud	20′-30′	25′-35′	Medium	Tolerates shade, strong spring color

Scientific Name	Common Name	Mature Height	Mature Canopy Spread	Growth Rate	Notes
*Cladrastis kentukea**	Yellowwood	30′-50′	40′-55′	Medium	Spreading and low branching, good in lawns
*Cornus alternifolia**	Pagoda Dogwood	15′-25′	1½ times the height	Slow	Underused but desirable native
Cornus kousa	Kousa Dogwood	20′-30′	Equal spread	Slow to Medium	Fairly disease resistant
Corylus colurna	Turkish Filbert	40′-50′	1/3 to 2/3 the height	Medium	Tolerates drought
*Crataegus phaenopyrum**	Washington Hawthorn	25′-30′	20′-25′	Medium	Fall berries attract birds
*Fraxinus americana**	White Ash	50′-80′	Equal spread	Medium	Grows wide as well as tall
*Fraxinus pennsylvanica**	Green Ash	50′-60′	25′-30′	Fast	Fast growing, tough
Ginko biloba	Ginko	50′-80′	30′-40′ +	Slow to Medium	Excellent city tree, great fall color. Plant only males
Gleditsia tricanthos (thornless)**	Honeylocust	30′-70′	comparable spread	Fast	Gives filtered shade, fall gold color
*Gymnocladus dioicus**	Kentucky Coffeetree	60′-75′	40′-50′	Slow to Medium	Male preferably, an underused tree
*Liquidambar styraaciflua**	Sweet Gum	60′-75	2/3 equal to height	Medium to Fast	Fall color, star-shaped leaf, needs large area for root development
*Liriodendron tulipifera**	Tuliptree	70′-90′	35′-50′	Fast	Plant in large areas, tallest native tree
Maakia amurensis	Amur Maakia	20′-30′	Wider than tall	Slow	Good street tree, underused

Scientific Name	Common Name	Mature Height	Mature Canopy Spread	Growth Rate	Notes
Magnolia stelleta, esp. 'Centennial'	Star Magnolia	15′-25′	10′-15′	Slow	Needs moisture, flexible usage even on street
Malus spp.	Flowering Crabapples	15′-25′	15′-20′	Depends on variety	Many cultivars
*Nyssa sylvatica**	Tupelo, Gum Tree	30′-50′	20′-30′	Slow to Medium	Good in groves, moisture, nice fall color
Ostrya virginiana	American Hophornbeam	25′-40′	2/3 equal to height	Slow	Unique capsules, handsome bark
*Oxydendrum arboretum**	Sourwood	25′-30′	20′	Slow	4-season interest
Platanus x acerifolia	London Planetree	70′-100′	65′-80	Medium	Interesting bark
*Platanus occidentalis**	American Sycamore	70′-100′	Equal or greater spread	Medium to Fast	Interesting bark
*Quercus, spp. **	Oak species	60′-80′	Equal or greater spread	Depends on variety	The National Tree, grows very well
*Robinia pseudoacacia**	Black Locust	30′-50′	20′-35′	Fast	Tolerates very poor soil
Sophora japonica	Japanese Scholartree	50′-70′	Comparable spread	Medium to Fast	Mid-summer flowers
*Tilia americana**	Basswood	60′-80′	1/2 to 2/3 the height	Medium	Fragrant Blossoms
Tilia cordata 'Greenspire'	Littleleaf Linden	40′-60′	30′	Medium	Neat Shape

Scientific Name	Common Name	Mature Height	Mature Canopy Spread	Growth Rate	Notes
Ulmus americana 'Princeton'	American Elm	60'-80'	1/2 to 2/3 the height	Medium to Fast	Disease resistant
Ulmus parvifolia	Lacebark Elm	40'-50'	Equal or greater spread	Medium to Fast	Disease resistant, beautiful bark
Zelcova serrata	Zelcova	50'-80'	2/3 the height	Medium	Hardy

ATTACHMENT B

Methodology to determine Tree Canopy Shade Coverage in Square Feet

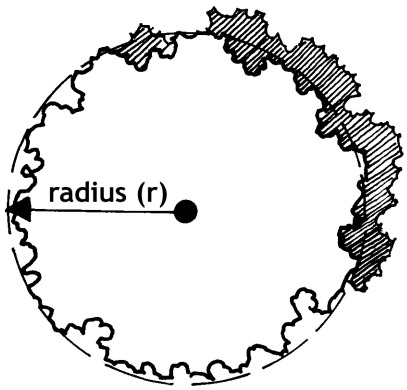
Use the mathematical formula $3.14r^2$ (r = radius)

1. Measure distance from tree trunk to mature canopy edge (radius)
2. Multiply the radius by itself (to get the radius squared)
3. Multiply that number by 3.14
4. The result is the canopy coverage in square feet
5. Calculate the canopy area for each tree and add them together
6. Divide by the total surface area (in square feet) to find shade coverage percentage

For Example:

- If the outer edge of the canopy is 18 feet from the tree trunk, then the radius is 18 feet
- That radius multiplied by itself (18 x 18) is 324
- That number multiplied by 3.14 is 1,017.36 square feet. This is the shade coverage for one tree

PLAN VIEW



ELEVATION