

NEWTON TREE MANUAL

Last Revised May 1, 2006

VISION AND GOALS

VISION

It is our vision to preserve, strengthen and expand Newton's urban forest.

GOALS

- Improve overall condition of trees, increase the number of “good” trees (make “fair” trees “good”)
- Start cyclical maintenance program
- Develop and implement appropriate tree planting plan
- Raise public awareness through development of public information campaign
- Develop and maintain an up to date inventory of the trees

TABLE OF CONTENTS

| | |
|---|----|
| <u>RESOURCE MANAGEMENT</u> | 5 |
| Inventory | 6 |
| Tree Care and Maintenance Practices | 8 |
| Tree Evaluation and inspections | 8 |
| Tree Pruning | 9 |
| Specialized Care | 13 |
| Strategies for caring for Newton’s Urban Forest | 16 |
| Strategic Pruning Plan | 16 |
| Cyclical Maintenance Plan | 17 |
| Tree Removal | 20 |
| Tree Planting | 22 |
| | |
| <u>OPERATIONS</u> | 30 |
| Urban Forestry Operations | 31 |
| Interdepartmental | 32 |
| | |
| <u>COMMUNITY FORESTRY</u> | 34 |
| Public Information Campaign | 35 |
| Events and Activities | 35 |
| School Programs | 36 |
| Community Involvement | 36 |
| | |
| <u>TREE POLICIES</u> | 37 |
| | |
| <u>LEGAL ISSUES</u> | 48 |
| City Tree Ordinances | 49 |
| State Tree Laws | 60 |

RESOURCE MANAGEMENT

Newton's Urban Forest is a 64 Million dollar asset. It provides countless benefits to the residents of Newton, as well as visitors and guests. Trees enhance and preserve the air quality through their filtering effects. They reduce noise and soil erosion. They reduce energy consumption and storm water runoff. Property value is increased through proper plant selection and location.

To insure that the citizens of Newton receive maximum benefit from the trees, the trees need to be cared for properly. In this section the components of the urban forest are outlined. It contains information on the inventory of trees and how information is to be collected and stored regarding each specific tree. The care and maintenance of trees is discussed, as is the specific processes related to their care. Strategies for tree planting are explored in depth. Other pieces and part of the whole urban forest are examined and how they interconnect and relate.

INVENTORY

Inventory Overview

A street tree inventory is the single biggest key in determining the condition and management needs of a community's street trees. Without the knowledge that an inventory provides a community cannot accurately address these needs, nor the associated costs. There are several methods for conducting a street tree inventory, ranging from precisely focused to broad and fully encompassing. A focused survey is one that only seeks out a specific problem. An example would be conducting a survey of all the trees on a given street that pose a hazard. In this example the survey can only be used to determine the trees that are hazards. It does not necessarily assist in determining any other maintenance needs

A more accurate method for conducting an inventory is a sampling method. This method is particularly useful for determining the overall statistics of the area surveyed. The key in conducting the random sample survey is insuring that the sample is truly random. In this method a percentage of the streets are inventoried. This information can then be extrapolated to establish a picture of the overall condition of a community's urban forest.

The most comprehensive inventory method is the complete inventory method. This method evaluates each and every tree in the urban forest. The location and specific attributes are permanently recorded for later use. Ideally a complete inventory is to be integrated into a computer database. This database allows the manager to actively control the entire resource.

Current information

It has been estimated that the City of Newton has a tree inventory of approximately 33,000 street trees. This figure was determined based on a street tree inventory that was conducted in 1991. In 1991 90% of Newton's trees were inventoried through the utilization of trained volunteers. Volunteers were trained to identify trees, determine condition, and locate the tree. Once collected the data was assembled and used to gain an overall picture on Newton's urban forest.

In 1997 some revisions were made to the original data. In 2002 the data was slightly revised to account for recent tree removals and plantings. For purposes of reaching the 33,000 number the 90% inventory was extrapolated to 100%. This inventory revealed a number of important facts.

- The overall street tree population is worth 64 million dollars
- There is one tree for every 50 feet of road
- The urban forest is primarily made up of Norway Maple trees
- The majority of the trees in Newton are in fair to good condition
- The average tree is 12.1 inches in diameter
- Thirty-two percent of Newton's trees are small (less than eight inches in diameter).

Next Step

Inventories are only useful when they are managed and updated on a regular basis. Information that was collected as few as five years ago may not provide an accurate picture of existing conditions. Newton's

inventory has not been substantially updated in over fifteen years. To effectively manage the City of Newton's trees the inventory data must be updated.

A two-pronged approach is recommended for gaining information on Newton's urban forest. The first aspect is to conduct a random sample survey of the trees in Newton. This relatively inexpensive and rapid method will allow the managers of the urban forest to understand the current overall status of Newton's trees. This information will be used to better allocate existing resources and make more responsible fiscal decisions. Over the long term the City's ultimate goal is to inventory each tree in the urban forest. This process can be costly and time consuming. The benefits will be an extremely accurate picture of the needs of the urban forest and the necessary resources that will be needed to properly care for the trees as outlined in this manual.

Any inventory in the City of Newton is to be recorded in a computer management system specifically designed for trees. This system will include a component linked directly to a Geographic Information System. The data to be collected will include:

Once collected this information will be used to develop certain conclusions. Firm action plans will be developed for the maintenance of Newton's tree population. Comparisons will be made against the data that was collected in 1991 to determine the effectiveness the Newton's urban forestry program. It will illustrate trends and areas requiring the most attention.

TREE CARE AND MAINTENANCE PRACTICES

The practice of caring for trees in an urban setting has to take into account a host of activities. These activities include pruning, watering, mulching, protection and treatment for insects, diseases and disorders. This section outlines the specifics of tree care operations that can be used in Newton.

TREE EVALUATION AND INSPECTIONS

The first step in the care and maintenance of a tree is its inspection. The inspections involve the examination of the entire tree, from roots to leaves and everything in between. The following are the areas to be inspected on a tree and the evaluation criteria.

- Roots – many, if not the majority, of the problems with Newton’s trees can be attributed to problems below ground. A host of issues can affect the roots of a tree. Diseases, insects, compacted soil and severed roots are among the many problems affecting the roots of trees.

When examining the roots the following are to be considered

- Are they well anchored?
- Are they primarily confined to the surface?
- Is there any mechanical damage?
- Are there girdling or kinked roots?
- Is the soil compacted or waterlogged?
- Is the root collar sound?
- Is there decay, disease or insects present?
- Trunk – Typically one of the strongest parts of a tree the trunk can succumb to many injuries, including mechanical damage from cars and trucks, decay, lightning, fire, etc.

When examining the trunk the following is to be considered:

- Are there any cavities? Is the bark and wood sound?
- Is the structure of the trunk typical for the species?
- Is there mechanical damage? Or fire injury?
- Are there any cracks, swollen or sunken areas?
- Is there evidence of insects or disease?
- Branches and canopy – Along with the leaves the canopy of the tree is one of the most noticed parts of a tree because of its size. Much of the work and attention paid to trees is focused here.

When examining the canopy and branches the following is to be considered:

- Are they attached strongly to the tree? Are they the correct diameter and located properly in relation to the trunk and parent stem?
- Is there any decay, cavities or dead branches present?

- Have they been properly pruned?
- Is their overall structure typical of the species?
- Is there any insects or disease present?
- Twigs and Leaves – For many people the leaves and new growth of the tree are the most noticeable. They can also provide the first signs that there is something wrong with the tree.

When examining the leaves and twigs the following is to be considered:

- Are the current years shoots similar to the last several years?
- Are the leaves and new growth well distributed throughout the canopy of the tree?
- Are the buds and leaves the proper size and color?
- Are there any weak or damaged twigs?
- Is there any evidence of insects and disease?
- Are the leaves wilted or dead?

Using the criteria above a tree is either categorized as Very Good, Good, Fair, Poor or Dead. The following defines these designations

- Very Good – The tree has excellent form and vigor and is a good representation of its species. There are no pests or mechanical injuries. No corrective pruning is required. Barring any serious changes in the tree (i.e. storm damage, accident or insect infestation) it can be reasonably expected to live a minimum of 25 to 30 years.
- Good – The tree is healthy and vigorous and is representative of the species. It has no apparent signs of insect, disease, or mechanical injury. It needs little or no corrective work but may need some pruning for clearance or obstruction. Barring any serious changes in the tree it can be reasonably expected to live a minimum of 20 years.
- Fair – The tree is of average condition and vigor for the area. It may need corrective pruning and removal of dead dying or diseased branches. May not be a true representation of the species or lack desirable characteristics. It may show minor insect, disease or physiological problems. Barring any serious changes in the tree it can be expected to live a minimum of 10 years.
- Poor – The tree is in a general state of decline but death is not imminent. It may have severe mechanical, insect, or disease injury. It may require major corrective pruning and removal of dead dying or diseased branches. It may have some Minor decay or cavities that will continue to get worse. Barring any serious changes in the tree it can be expected to live a minimum of 5 years.
- Dead/Dying – Dead, or death is imminent within 5 years. Fifty percent or more of the canopy is missing or defoliated. It may have an irreversible insect, disease or physiological problem. The structure and integrity of the tree may be seriously injured or compromised.

TREE PRUNING

Pruning has a significant effect on the health and longevity of Newton's trees. When done properly, pruning improves public safety, tree health and overall tree appearance. The main objective is to create and maintain a strong branch structure. In general all pruning in Newton is to be performed within the scope of the approved techniques as outlined in this manual.

General Pruning Requirements

- The most recent edition of ANSI A300 pruning specifications are to be followed closely. The ANSI A300 is the industry standard for tree care operations. It is administered by the American National Standards Institute, a private non-profit organization that administers the safety and maintenance regulations for the tree care industry.
- The City shall make strides to insure all work is performed by, or supervised by, a Massachusetts Certified Arborist or an International Society of Arboriculture Certified Arborist. The designation of Certified Arborist means that the person has achieved a certain level of competency and ability and that they are a committed professional, with the desire to care for trees properly.
- All pruning shall be performed in manner that maintains the natural aesthetic characteristics of the species and variety of trees. No topping or dehorning of trees or stubbing back of branches shall be permitted. All cuts shall be made to a lateral branch a minimum of one third the size of the branch being removed, unless otherwise instructed by the Director of Urban Forestry.
- The use of climbing spurs or spiked shoes shall not be permitted for pruning trees. They are only permitted during tree removal operations and emergency aerial rescue operations.
- All cuts shall be made sufficiently close to the parent stem so that wound closure can be readily started under normal conditions. Cuts shall never be made through the branch collar. Slab cuts, rip cuts and all other cuts that do not meet the most current edition of the ANSI A300 pruning standard will not be accepted.
- Tree are to be pruned away from structures, lights and surfaces according to the following:
- Street/Roads – All branches shall be pruned to allow approximately the following, fourteen foot of clearance over the center of the street surface and twelve foot of clearance at the street surface edge
- Sidewalk/Paths – All branches shall be pruned to allow seven to eight foot clearance over sidewalks and paths.
- Luminaries – Any and all branches extending directly below a street light, limiting the light reaching the street or path shall be removed and all branches shall be cut back to afford a minimum five foot clearance.
- House/Building – All branches shall be pruned to allow a minimum of five foot clearance away from homes and buildings, or if possible, ten foot clearance where trees will not be severely disfigured due to crown reduction.
- All limbs over two inches in diameter to be removed shall be precut to prevent splitting. Any branches that would injure the tree or other objects by falling shall be lowered to the ground by proper rigging and rope procedures.
- One of two crossed or rubbing branches are to be removed where practical, only where the removal will not leave large holes in the general outline of the tree.
- On trees known to be diseased, tools are to be disinfected after each cut between trees and where there is known to be a danger of transmitting the disease on tools.
- Lateral branches as well as occasional water sprouts may be retained. Complete removal of secondary laterals and water sprouts resulting in the stripping of major limbs, will not be permitted.

Specific Tree Pruning Requirements

There are different approaches and methods for pruning trees. The approach used can depend on a host of variables, from tree size, to species, to location. Each of these variables needs to be taken into consideration when caring for Newton's trees. The following guidelines take into consideration these variables and are based on the age or size of the tree.

YOUNG TREES (primarily trees under twelve inches in diameter)

Objectives

- Encourage growth in the portion of the tree that is to become dominant.
- Develop a dominant leader.
- Develop well placed scaffolding branches.
- Prevent the growth of branches below the eventual permanent canopy.
- Prevent poor branch unions.

The primary purpose for pruning young trees is to improve trunk and branch structure, remove or shorten low limbs for clearance, thin the canopy to allow better airflow, and to maintain health. Aesthetics are secondary to the health and structure of the tree at this time. The prevention or elimination of multiple leaders or trunks is the primary concern. The pruning of small trees may require the removal of up to thirty percent of the foliage. With the exception of clearance over roadways, paths, and away from structures the removal of live limbs under one inch in diameter on the interior of the canopy is not necessary. All dead, dying and diseased limbs over one inch should be removed.

Multiple Codominant leaders are stems growing at about the same rate, originating from the same location on the tree and are approximately the same size. This type of growth leads to poor branch structure and potential hazards later on. Reduction pruning should be used to remove branches, trunks or leaders not considered the main leader. The main leader is not to be subordinated, headed or removed.

Most trees in Newton are over paved areas or are located where cars and pedestrians travel. At these locations, as early on in the trees life as practical, branches should be reduced in size by pruning the branch back to an available side branch at least one third the diameter of the portion to be removed. Sufficient clearance should be provided for pedestrians and vehicular traffic where appropriate. When clearing away from structures such as buildings, lights, etc, directional pruning techniques are to be used so future growth is directed away.

Under no circumstances should the interior of the tree be stripped of all the foliage, leaving only live foliage at the ends of the limbs. The canopy of young trees will only need cleaning when the following is an issue:

- When broken or dead limbs are present one inch in diameter or larger.
- When two limbs are crossing or rubbing each other.
- When two limbs one inch in diameter or larger are originating within twelve inches of each other on the trunk.
- Where two or more limbs are crossing or too closely spaced, one limb is to be shortened or removed.

MEDIUM AGED TREES (primarily trees between twelve to twenty four inches)

Objective

- To prune these trees in a manner that continues to promote a strong central leader and sound scaffolding limbs
- To maintain public safety
- To reduce the likelihood of weather related damage

Medium aged trees bridge the gap between young trees and older mature trees. The type of pruning required for these trees varies. For the trees that are on the smaller end of the spectrum, the preceding outline for young trees is to be followed with some of the techniques for mature trees incorporated. For trees on the mature end of the spectrum, the pruning techniques for mature trees should be used.

MATURE OLDER TREES (trees over twenty-four inches in diameter)

Objective

- Insure public safety through the removal of dead branches and the reduction of branches with serious cracks, decay or other defects.
- Reduce the likelihood of storm damage through selective crown reduction and thinning.
- Allow light penetration and air circulation, by the selective removal of not more than twenty percent of the foliage at any one time.

The pruning of mature trees in Newton includes several major pruning types. These pruning techniques are commonly used to insure public safety and improved tree health.

- Crown cleaning is the most commonly practiced form of pruning. This technique is used to remove dead, dying, diseased, damaged and out of place branches. It reduces the risk of injury or property damage from fallen limbs. Public safety is greatly improved by using this technique to remove any pre existing hazards.
- Crown thinning is to be used to increase light and air penetration and to reduce the overall mass of the canopy. It is used as a preventative measure for reducing the susceptibility to storm damage. Proper thinning removes lateral and parallel branches, mostly from the end portion of limbs. When done correctly it does not change the overall size of the tree. Caution is to be used when thinning, over thinning reduces photosynthesis, increases the likelihood of branch failure and creates a weak branch structure. Only a limited number of small diameter interior branches are to be removed, care must be taken in not removing only interior branches.
- Crown reduction is used to reduce the overall size of a tree or a portion of the tree by shortening branches that go beyond the desired location. The longest portions of the main branches are cutback to existing smaller lateral branches. In Newton this technique is primarily used to prune trees away from buildings, signs, lights, etc. Reduction pruning can also be used to reduce failure due to sever weather.

- Crown raising is used to provide clearance over roadways and pathways by the removal of the lower limbs on a tree. Most of Newton's street trees are located in close proximity to roads and sidewalks. This technique is used to insure public safety, reduce property damage and to avoid possible damage to the tree.

SPECIALIZED CARE

In addition to pruning a tree there are several other tree maintenance practices that are used from time to time. The following outlines some of the basic practices and provides guidelines for their use in the City of Newton. These guidelines are to be followed only when circumstances warrants them. Often the expense, time, and energy of these techniques make them prohibitive to conduct on a regular basis. The following techniques will be considered for use when the benefits out way the costs. These guidelines will also be used when the City requires trees be repaired due to vandalization, accident, or other tree destruction. This applies to City trees and private trees where a violation of the Tree Preservation Ordinance has occurred

*Guidelines for watering and mulching trees can be found under the tree planting section.

Fertilization

Trees in urban environments are growing under harsh conditions. Many times the soils they are growing in lack nutrients, natural organic materials and are deprived of air. This coupled with competition from turf grass and other vegetation can lead to an undernourished tree. From time to time these conditions may require the use of fertilizer. Because fertilizer can lead to undesirable results attention must be given to how and when it is used. The following are guidelines on fertilizer selection and use in Newton.

Objective

- To maintain the healthy appearance and vigor of mature trees in poor soil
- To rescue weakened, nutrient-deprived trees
- To cure specific nutrient deficiencies

Steps of fertilization process

Determine the need: Observe the growth rate of the tree and the size and color of the leaves. Abnormal growth or off color can indicate nutrient deficiencies. When fertilization is being considered the soil should be tested to determine the exact nutrient requirements. This will reduce the likelihood of using excessive amounts or improper amounts of chemicals.

Determine fertilizer formulation: Once it has been determined that the tree need fertilization the proper fertilizer is to be applied. When ever possible an organic fertilizer should be used, however this may not be possible in all situations. High nitrogen rates are to be avoided. Trees should not be fertilized at a rate higher than 3 pound of nitrogen per 1000 square feet. Excessive nitrogen content will force the shoots to grow rapidly. Rapid extension deprives the root system of nutrients and increases the likelihood of storm damage and increase the need for pruning. All fertilization should be in keeping with the City's most current regulations and Integrated Pest Management policies.

Determine Application method: There are several methods for applying fertilizer to the root zones of trees. Most common is applying the fertilizer to the soil by either applying dry fertilizer on the surface around the tree, drenching the soil with a liquid fertilizer, or drilling hole in the soil at intervals around the tree and filling the hole with the fertilizer. Other methods for applying fertilizer are trunk implants and injections. The specific problem and site conditions will dictate which method is appropriate. All applications of any kind should be administered or supervised by a certified arborist

Tree Support structures and repair

In addition to the damage that can be inflicted by diseases and insects people and Mother Nature also can severely damage trees. There are limited techniques for repairing structurally damaged or weakened trees. The following outlines some of the common techniques used to repair and preserve trees.

Objective

- To repair or mitigate structural damage
- To prevent future damage and tree loss
- To improve the aesthetic characteristics of the tree

Artificial Support: Due to storm damage, growth habits, inadequate maintenance practices or a whole host of other issues, trees from time to time require mechanical support. This support is in the form of metal cables placed in the canopy to prevent branches from splitting from the trunk and metal bars placed through the trunk or large branches of the tree. The use of artificial support is not practical for most City owned trees. By placing a cables or rigid braces in a tree the City is signifying and acknowledging that there is a potential hazard in the tree. This type of support is often used to support narrow branch crotches, split crotches and trees with excessive decay. Many times these issues can be prevented by proper tree pruning and maintenance practices when the tree is developing into a mature tree. If determined to be necessary all cabling and bracing is to be done by trained, skilled professionals that perform this type of work on a regular basis. All work is to be done in accordance with all current industry standards including the ANSI A300 for Tree Support Systems.

Wound Treating and Dressing: For many years tree wounds and cuts on trees were treated with some form of paint, tar or creosote. Today, research has shown that this practice is of no benefit to the tree and in some cases can increase the likelihood of decay. For this reason no trees in Newton are to have wounds and cuts painted, unless approved by the Tree Warden

If a tree sustains a large trunk wound the following steps should be taken where practical.

- Treatment is to be done as soon as possible
- If any moist bark remains tack back on in the appropriate place
- Cover the wound with burlap to prevent drying
- Any dead bark or wood splinters are to be removed in a year
- If loosened bark has dried, remove it by scribing along the wounds edge with a sharp knife. Edges are to be smooth and curved
- Remove as little cambium layer and sapwood as possible

- Promote good tree vigor by providing supplemental water, mulch and fertilizer if necessary.
- DO NOT PAINT

Cavity Filling: Similar to wound dressing, cavity filling was considered necessary for tree survival for many years. Much of the old process for filling a cavity did more harm than good for the tree. Today the filling of cavities in trees is only for ascetic reasons and is done much differently.

If deemed feasible the following steps are to be taken when filling cavities in trees.

- Only the softest most rotted wood is to be removed. SOUND, HEALTHY WOOD IS NOT TO BE REMOVED OR CUT INTO
- Spray a silicon spray on a piece of aluminum foil
- Place foil over cavity and wrap with burlap
- Fill cavity with Polyurethane foam and let sit for several hours
- Remove foil and burlap
- Cut foam down to just below the inner bark
- Paint FOAM with an appropriate paint to seal foam and blend in with tree color

Treatment of disease and insects

There are a considerable number of insects and disease that effect trees. In Newton most of the insect and disease issues are a secondary problem. Much of the damage to the foliage of trees is more of an aesthetic issue than life threatening to the tree. For this reason, along with environmental concerns and fiscal concerns, the trees are not treated for insect and disease issues in Newton. Newton has been fortunate for many years that there has been no major pest outbreaks that have effected the majority of its trees. Most recently there has been the increasing presence of defoliating insects. These insects will be closely monitored. When and where possible Newton will work to minimize the impacts.

The City of Newton has a formal policy that governs the treatment, control and monitoring of pests. It is known as the Integrated Pest Management Policy. This policy establishes clear guidelines and practices for the use of chemicals to control insects and disease. The basic premise of this policy is to use sound maintenance and operational procedures to avoid the need for chemicals. Chemicals are seen as a last resort, all other options are to be explored prior to their use.

If it is determined that chemicals are to be used the Integrated Pest Management Policy is to be closely followed. This includes presenting the plan for treatment to the Integrated Pest Management Committee for their approval. All federal, state and local laws are to be adhered to. The least toxic and most precise method (including injection methods) is to be used. Notices are to be placed in the area of treatment and any abutting property owners are to be notified. All pesticide applications are to be performed by Licensed Pesticide Applicators with experience with the specific problem.

STRATEGIES FOR CARING FOR NEWTON'S URBAN FOREST

Current Conditions

A critical issue facing the City of Newton is the preservation of its 64 million dollar tree asset. To be properly preserve trees need to be maintained and pruned proactively. Cyclical pruning reduces storm damage, misshapen trees and increases longevity. The number of trees proactively pruned in Newton has declined steadily. This decline can be attributed to several factors. Newton's tree population is ageing, at the same time environmental pressures are increasing, many of the last ten years have been considered drought years. Over the last fifteen years the amount of money budgeted for tree care has not increased (fifteen years ago the budget was cut in half). This level funding translates into a net loss of money and thus reduced services. These factors have led to an increase in citizen requests for service. Time spent responding to these requests has reduced time spent on proactive pruning, leading to further citizen requests. Most recently funding has come available thru the Tree Preservation Ordinance. This funding is short lived and is not a long term solution.

Despite the efforts over the last fifteen years to perform some proactive pruning, there is no established schedule or cycle to the work. Once an area is completed there is no assurance that those trees will ever be pruned again. The following provides strategies for caring for all of Newton's trees.

Preventative Maintenance Planning

There are two approaches to be considered for caring for Newton's trees, the cyclical approach and the strategic approach. Both systems divide the City into logical groupings and sets priorities and procedures for the work to be done in those areas. The cyclical approach relies on specific inventory data where as the strategic approach relies on more generalized information based on current trends and issues.

Prior to the late eighties and early nineties the City of Newton regularly pruned and maintained its trees, street by street. Fiscal woes led to a major reduction in the number of trees cared for on a regular basis. The ultimate goal of this plan is to provide a plan for caring for all of Newton's trees on a regularly scheduled basis. Due to years of neglect and a limited budget there are several steps to be taken to reach a cyclical maintenance plan. Also a factor in pruning is its location and size.

STEP ONE: STRATEGIC PRUNING PLAN

Objective:

- Reduce serious safety concerns by removing dead, dying, diseased, weak or poorly located branches
- Reduce citizen requests
- Correct years of neglect and prepare for cyclical program

Currently, the limited funding and the lack of an up to date comprehensive inventory necessitates a strategic approach to pruning Newton's trees. The strategic approach focuses primarily on safety pruning and citizen concerns.

For purposes of snow plowing, the City is divided into sections known as snow routes. For purposes of this strategic plan these routes areas are used to delineate pruning routes throughout the City. Based on storm

emergency records, citizen requests and a brief survey, these pruning routes have been prioritized into three areas, priority one, two, and three. Each area was rated based on the number of trees, average condition, and pruning needs. Emphasis was placed on pruning needs and the reduction of hazards.

- Priority three areas are areas that need relatively less pruning, have few trees and/ or no major safety issues.
- Priority two areas are areas that need relatively moderate pruning, have a moderate number of trees and/ or a number of safety issues.
- Priority one areas are areas that need a considerable amount of pruning, have a moderate to high number of trees and a number of safety issues.

Priority one areas are typically those areas where a large number of storm emergencies occur and a number of citizen request are initiated. By pruning these areas ahead of time the damage done by future storms is reduced and the volume of requests are reduced. Pruning will take place area by area. It will start with priority one areas and work its way down to priority three areas. Periodically the areas will be reevaluated to determine if the status of the area has changed. Any changes will be addressed as deemed necessary. The goal is to have all trees pruned in all the areas throughout the City within a six-year time frame. Every tree will be pruned according to the following:

- Prune all trees as needed to maintain a strong central leader, maintain structure and prevent storm damage.
- All broken, damaged, diseased, or weak limbs are to be removed as necessary
- Inspect for condition and issues at time of pruning

STEP TWO: CYCLICAL MAINTENANCE PLAN

Vision/ Goals

The City of Newton's preventative maintenance plan shall insure the longevity and health of Newton's urban tree population by outlining procedures and requirements, based on industry standards, existing conditions, public concern and fiscal responsibility. It presents generalized information of proper tree care practices and recommendations for frequency of maintenance.

Objective:

- Improved public safety
- Reduction in storm damage
- Increased tree longevity
- Reduction in trees removed annually
- Reduction in emergency activities
- Reduction in service requests

Components of the plan

The key to health and longevity for trees is proper timely maintenance performed on a regular basis. Failure to place trees on a proactive recurring schedule results in poor tree structure, increased pruning time, and compromised public safety. A proper pruning program for the City of Newton's trees is to divide the population into categories. They must be first divided into trees in residential areas and trees in commercial and highly urbanized areas. These categories are then divided into groupings, young trees and medium aged to mature trees. As previously outlined, different age trees have different needs and requirements. The growing location must also be taken into consideration because of the different types of conditions and pressures.

The following outlines how trees in residential areas and trees in commercial and highly urbanized areas of the City are to be cared for.

Maintenance Plan for Residential Areas

Young trees (primarily trees under twelve inches in diameter)

- Prune as needed every three to four years to encourage a strong central leader and sound branch structure
- Mulch with organic mulch at the end of year three and year six following planting
- Water for one to two years following planting as needed
- Fertilize trees planted one to two years following the planting, as required.
- Inspect for condition and issues at time of pruning

Medium-aged and Mature trees (trees over twelve inches in diameter)

- Prune as needed every six to seven years for safety, perform thinning and reduction cuts as needed to maintain structure
- Inspect for condition and issues at time of pruning, take necessary corrective measures as needed

Maintenance Plan for Commercial and highly urbanized areas

These are trees that are typically growing in confined areas. Most are growing in "tree pits" (small areas typically 4'x4'), many times covered by a steel grate surrounded totally by pavement.

Young trees (primarily trees under twelve inches in diameter)

- Prune as needed every three years to encourage a strong central leader and structure
- Inspect annually for issues. Broken, damaged, diseased limbs are to be removed as necessary
- Mulch with organic mulch every three years
- Water regularly till established and when weather conditions warrant

- Fertilize regularly as deemed necessary
- Maintain grates and remove guards where necessary

Medium-aged and mature trees (trees over approximately twelve inches in diameter)

- Prune as needed every three years for safety, perform thinning and reduction cuts as needed to maintain structure and prevent conflicts
- Inspect annually for issues. Broken, damaged, diseased limbs are to be removed as necessary
- Mulch with organic mulch every three years as required
- Remove grates as necessary

MAINTENANCE PLAN FOR PARKS, SCHOOLS AND OTHER PUBLIC GROUNDS

Objective:

- Improved public safety
- Increased tree longevity
- Reduction in storm damage

Components of the plan

A plan for caring for Newton Trees would not be complete unless it included the countless trees found in our Parks, Schools and other public grounds. The following outlines the plan for three areas

All trees (young to mature)

- Inspect annually for hazardous conditions and take necessary steps to reduce or eliminate hazard.
- Annually prune trees that are conflicting with buildings, structures, roadways and paths.
- Prune all trees as needed every six to seven years to maintain a strong central leader, maintain structure and prevent storm damage.
- Inspect annually for issues. Broken, damaged, diseased limbs are to be removed as necessary
- Mulch young trees with organic mulch at the end of year three and year six following planting
- Water young trees for one to two years following planting as needed
- Inspect for condition and issues at time of pruning

TREE REMOVAL

Unfortunately, there are times when a tree must be removed. This removal may be because the tree is a hazard, located too closely to proposed construction or is a nuisance to the public. Ultimately every tree growing along the streets and on most public lands will be removed. The following outlines the different parameters and procedures for the removal of trees in Newton.

Most tree removals in Newton are initiated by a citizen or a City agency. In most cases they are requesting that the tree be removed because they believe it is a threat to their safety and the safety of others. Other times this tree may be impeding the construction of a driveway or the expansion of the road. Regardless the reason no tree in Newton can be removed without the approval of the Tree Warden. If the tree meets the qualifications of a significant hazard the tree will be removed as soon as reasonably possible based on the condition of the tree and the priorities of the Division of Urban Forestry. If the tree is not a significant hazard the tree will not be authorized for removal by the Tree Warden. If the petitioner still wishes that the tree be removed a public tree removal hearing will be held in accordance with Massachusetts General Chapter 87.

Hazard tree determination

The health and safety of a tree can be two distinct and separate characteristics. A tree in poor health and severe decay in the trunk in most cases would be considered a significant hazard. However this same tree in the middle of an isolated area where it can not fall on someone or something of value (i.e. 'target') is not a significant hazard. On the other hand a tree can have a large lush crown with vigorous growth but have significant internal decay and structural problems. If located near a target, which most trees in Newton are, this tree is a significant hazard.

Criteria For Hazard Evaluation

Significant Hazard- A tree that possesses structural defects or irreversible decline that may cause the tree or part of the tree to fall on someone or something of value, and is determined to be imminent or irreparable. Trees are to be evaluated for their hazard potential using industry accepted guidelines. Various organizations and agencies have published guidelines that are updated regularly. The City uses the guidelines established by the USDA Forest Service for hazard tree evaluation.

Process For Non Hazard

The removal of trees for any other purpose than safety related issues is discouraged by the City. It is Newton's goal to maintain and keep as many shade trees as possible for the benefit and enjoyment of all. There are certain instances where people may want to have the tree adjacent to their property removed. The following outlines the process for the request to remove a City street tree. Steps one thru three apply to anyone wishing to remove a City street tree. Steps four thru eight do not apply to City of Newton Departments

1. An application for street tree removal must be filled out and filed with the Tree Warden
2. The Tree will be inspected by a staff member of the Division of Urban Forestry.

3. Per Chapter 87 of Massachusetts General Law a tree hearing will be held. If at or before the hearing an objection in writing is received by the Tree Warden than the tree can not be removed. In the event that this happens the applicant can either except the denial or make a request to the Mayor that it be removed.
4. The applicant must have prior approval and all necessary permits from all other City agencies, including but not limited to the Inspectional Services Department and the Engineering Department where applicable.
5. If and when approval is granted for the removal of the tree, the applicant is required to pay a fee equal to the amount the City pays for the removal of the tree.
6. The applicant must also pay for the replacement of the tree. The City replaces the tree based on the "Tree Replacement/ Removal Chart". (see appendix).
7. Once the payment has cleared, the removal of the tree will be scheduled and subsequently removed.
8. The planting of the trees will be executed during the next available planting cycle. Replacement trees shall be planted at locations determined by the Tree Warden, paying special attention to the area where the tree was removed.

TREE PLANTING

The planting of trees is a critical component of managing Newton's Urban Forest for the future. The planting of trees insures that the urban forest will exist for future generations. In recent years the number of trees planted by the City of Newton has been far less than the number of trees removed and far less than the number of trees requested by residents. The lack of tree planting has left a considerable number of available planting locations citywide.

The ideal way of addressing the planting needs of Newton is to create a formal tree planting plan that takes into account a number of variables. The Street Tree Planting Plan would be a document that describes the procedures for planting street trees Citywide. It would be designed to be used as a framework for a comprehensive approach to the planning and implementation of a tree planting program. As a management tool it guides City officials, residents and property owners in street tree design and proper planting techniques. Specifically it would be used to classify areas of the City by summarizing typical conditions, available planting space and other special considerations. It would delineate appropriate tree categories for specific situations, such as small trees, medium trees, large trees, etc. It would set priorities for street tree planting based on predetermined categories with input from City administrators, the Urban Tree Commission and citizen requests.

The creation of a Street Tree Planting Plan for Newton is a considerable undertaking that requires considerable research, funding and planning. The creation of such a document is a long term goal for Urban Forestry in Newton. Until such a plan is in place the following guidelines and strategies are to be followed for planting trees in Newton.

Tree Selection

- Species of trees selected for planting should be a diversity of different tree species. A city-wide monoculture of only one type of tree species has inherent dangers associated with disease and insect problems. The city is to balance planting between uniformity in defined areas and visual variety city-wide. Uniformity may be desirable in parks, commercial squares or historic areas where plantings of a single species or variety make a significant aesthetic contribution.
- Species will be selected for their characteristics of hardiness, tolerance of urban pollution, disease and insect resistance, lower maintenance and appropriate character.
- Species choice will be dictated by the location and circumstances. Open areas such as parks, public grounds and abnormally large planting strips accommodate large maturing trees. Most berm areas in Newton are too narrow to adequately support large maturing shade trees, in these locations medium maturing shade trees are to be selected or large maturing shade trees that have a slow growth rate. All other areas are to typically be planted with small maturing trees. This includes areas where overhead utility lines are present.
- A list of appropriate species for specific situations is to be maintained by the City. This list, known as the Newton Tree Species Selection List is to be reviewed annually to insure that the trees being planted are a true representation of what is needed.
- No one tree species planted should exceed ten percent of the total street tree population; no one tree genus should exceed twenty percent of the total street tree population. Due to the high number of maple trees (predominantly Norway Maples) growing in Newton a moratorium should be placed on this genus of trees.

Planting Location Evaluation

- The objective when selecting the appropriate tree for the location is to choose the best species for the right place. This process must consider all the environmental factors of the location and the available growing space above and below ground.
- Tree planting locations should be selected where they will have the greatest positive impact on the area.
- No street trees other than those low-growing species that do not attain a mature height greater than twenty feet shall be planted under or within ten feet of any overhead powerlines.
- Tree plantings made in a concrete/ asphalt sidewalk area must have minimum of twenty-four square feet of cutout area.
- There are a number of minimum distances that should be followed when locating the proper planting location, in Newton they are:
 - 15 – 20 feet from street lights
 - 30 – 40 feet from traffic signals
 - 30 – 40 feet from intersections
 - 4 – 5 feet from underground utilities
 - 10 feet from driveways
 - 10 feet from fire hydrants
 - 5 feet from storm sewer lines
 - 5 feet from crosswalks
 - 5 feet from any building

Planting Location Priorities

The priorities for tree planting in Newton are set by the Newton are ultimately set by the Mayor and Commissioner of Parks and Recreation. The Urban Tree Commission will guide these individuals with input from the City's Director of Urban Forestry. The priorities are:

FIRST PRIORITY: The City will be surveyed regularly to identify the areas of greatest need. This includes:

- a. Residential streets, commercial areas or public grounds where a significant number of trees have been lost.
- b. Sites where a new or changed development or a municipal project requires additional plantings.
- c. Prominent public place. Particularly in village centers, where new trees could enhance economic vitality or the quality of community life.

SECOND PRIORITY: Individual sites where trees have been lost.

- a. When funding is available sites will be automatically put on a priority list for replacement when a tree is removed; no request is necessary. Locations where new trees have not survived will also be added to the list.
- b. Whenever a public shade tree is lost in front of private property the owner should be consulted on if they would like a new tree and also the option of planting the tree off-berm should be discussed.

THIRD PRIORITY: Requests for non-replacement trees may be made by residents or city officials and they will be filled under the following guidelines:

- a. When the first and second priority plantings have been completed or ruled out and new trees remain available.
- b. When designated funding for non-replacement trees is available.

Note: From time to time exceptions may be made to these priorities as determined by the Urban Tree Commission in consultation with the Director of Urban Forestry. These priorities do not apply to circumstances where additional funding has been made available. This includes the use of funds received from the Tree Preservation Ordinance. The policy for use of this money for planting can be found elsewhere in this document.

Tree Spacing

Certain types of trees and circumstances dictate the distance that trees are planted from one another. These guidelines apply to all trees planted in the City of Newton. This includes street trees, park trees, trees planted in open areas, and trees planted on private property as it relates to the Tree Preservation Ordinance.

- Large maturing trees shall be placed no closer than thirty five feet on center.
- Smaller maturing trees shall be placed no closer than twenty feet on center.
- When space is limited or to achieve a certain effect, closer spacing may be considered. This applies to locations where large maturing evergreen trees are being used as a screen. In this instance fifteen feet on center spacing shall be considered, approval is to be determined by the Director of Urban Forestry.

Planting Specifications

PLANT MATERIALS

General Qualifications

- a) Trees shall be good examples of their species or variety, with uniform, well developed branch structure, balanced head, and single leader.
- b) Trees shall be in accordance with the American Standard for Nursery Stock of the American Association of Nurserymen.
- c) The scientific and common name of plant material herein specified, conform with the approved names given in the most recent edition of standardized plant names prepared by the American Joint Committee on Horticultural Nomenclature, and the American Standard for Nursery Stock.
- d) All trees shall be freshly dug. All trees shall be nursery grown. No collected trees will be accepted. No plants from cold storage or previously heeled in stock will be accepted.
- e) Only trees grown within Hardiness Zones 1 through 5 as established by the Arnold Arboretum, Jamaica Plain, Massachusetts, or USDA zones 2-6 will be accepted. The Contractor shall certify in writing that the stock has actually been grown under Zone 5 or hardier conditions. Trees will not be accepted without such certification.
- f) Trees shall be sound, healthy, and have vigorous growth, free of disease, insect pests, eggs or larvae. All parts shall be moist and show active green cambium when cut. All plant materials shall meet or exceed the specifications of federal, state and county laws requiring the inspection and control of plant diseases and insect infestations.

Tree Roots

- a) The root system of each tree shall be well provided with dense, fibrous roots.
- b) Root systems shall be solid natural balls of earth firmly wrapped with untreated eight (8)-ounce organic burlap, securely held in place by stout cord or wire. Processed or manufactured root balls or inorganic (plastic) burlap will not be accepted. No trees will be accepted if the ball of earth surrounding its roots has been badly cracked or broken.
- c) The diameter and depth of the root ball must be sufficient to encompass the fibrous and feeding root system necessary for healthy development of the tree.

Tree Trunk

- a) The trunk of each tree shall be a single uncut leader and straight trunk growing from a single unmutilated crown of roots. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety. No trees that have had their leaders cut, scarred, scraped, bruised, or wounded, will be accepted.
- b) The trunk shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire or other causes. No pruning wounds shall be present having a diameter exceeding two inches and such wounds must show vigorous bark growth on all edges. Trees shall not be pruned prior to delivery.

Tree Height

- a) When indicated, the overall height of the trees (measured from the crown of the roots to the tip of the top branch) shall be not less than the minimum size designated.
- b) Height from the ground to the lowest branch shall be eighty (80) inches. The required height to lowest branch may be accomplished by pruning after installation if, in the City's opinion, this does not detract from the shape or form of the tree or cause unsightly scars.

Handling

- a) Trees shall be dug, handled and transported so as to prevent damage of any sort including but not limited to breakage of branches, scraped or bruised trunk, or broken root ball.
- b) Trees shall be protected from desiccation during digging, storage, and transportation by watering, covering, and application of anti-desiccants, as necessary to ensure their continued health and viability.
- c) When trees cannot be transported and planted immediately upon being dug they shall be stored and protected from desiccation and extremes in temperature by being heeled-in, watered, and covered and/or sprayed with an anti-desiccant.

PLANTING SEASON

Spring: Deciduous Trees: April 1 – May 31

Fall: Deciduous Trees: October 1 – November 15

1. Dig trees only while dormant: i.e., prior to bud break in the spring or after the onset of dormancy in the fall.
2. Any trees dug but not planted within the same season shall be heeled in and maintained by the supplier, at no additional cost to the City, until the next planting season. No planting out of season will be permitted.

TREE PIT PREPARATIONS

1. Remove all soil from above the root flare to expose the top-most root where it emerges from the trunk, and measure the distance between the top-most root and the bottom of the root ball.
2. Hole shall be dug about 10% shallower than this depth and at least two times the width of the ball.
3. When tree planting pits are dug using mechanical means, i.e. backhoe, excavator, auger, etc., and the side walls of the pits become plastered or glazed, the plastered or glazed surface shall be properly scarified.
4. Surplus excavation and unsuitable material from the tree planting pits shall be disposed of by the contractor and to the satisfaction of the Director of Urban Forestry.

TREE INSTALLATION

1. Set trees to line and grade as shown in the drawings, with 10% of the root ball (typically 2 inches) higher than the sidewalk surface or finish grade, centered in the planting pit, and plumbed straight.
2. Root balls with wire baskets must be completely cut off the sides of the root ball, leaving the bottom of the wire basket in place. **DO NOT PULL WIRES OUT FROM UNDER THE ROOT BALL.**
3. Fill hole about 1/3 full and gently slice a shovel down into the backfill 15 to 25 times all around the tree. Do NOT step firmly in the backfill soil because this could compact it and restrict root growth. Be careful not to damage the trunk or roots in the process.
4. Remove or lay back top 2/3 of burlap off the root ball. **DO NOT PULL BURLAP OUT FROM UNDER THE ROOT BALL.** Cut and remove all rope. Remove all non-biodegradable root ball materials, if present.
5. Water the first third of soil to settle and eliminate air pockets. Backfill the remainder of the pit in layers not to exceed six 6 inches. Water soil to settle. Fill in any holes or depressions with additional backfill soil. When the hole is filled with soil the root ball should remain approximately 2 inches above the backfill soil. The top of the root ball is not to be covered by the backfill soil.
6. Form a 3 to 4 inch deep saucer around the tree as shown in the drawings.

7. After bringing soil in pit to grade and forming the planting saucer, thoroughly soak the tree pit by repeatedly filling the pit with water to the full depth of the saucer, allowing the water to completely percolate into the soil between fillings.

ROOT BARRIER INSTALLATION

1. Cut a trench 2-4 inches wide and at least 20 ft. long centered on the root source and adjacent to the structure using clean-cutting trench digging equipment.
2. Install Biobarrier as quickly as possible (within 12 hrs.) after opening sealed wrap; high temperatures and direct sunlight reduce effective life. Place excess material in original wrap and seal with spare ties provided.
3. Roll out the Biobarrier and trim the length of the trench (See FIGURE 2).
4. Remove the paper backing from tape located on one edge of the 11"x30' Installation strip (See FIGURE 3)
5. Place taped edge of strip between the first and second row of nodules starting at one end of the Biobarrier and press firmly to ensure good adhesion (See FIGURE 4).
6. Place installation strips approximately 2.5 ft. (760mm) apart the entire length of Biobarrier.
7. Use strips to lower Biobarrier into the trench and position the top edge of the fabric 1 inch (25mm) below the surface by folding the top edge of the strip over onto the flat soil or hardscape next to trench (See FIGURE 5).
8. Anchor the Biobarrier by stapling the dark gray strips into the soil using staples provided, or by putting soil on top to hold in place; tamp backfill firmly and remove dark gray strips after job is complete.

FERTILIZATION

1. Install fertilizer packets at depth of six (6) to eight (8) inches equally spaced around the plant, as it is being backfilled. Packets shall be installed per the manufacturer's instructions. Packets shall not be cut, ripped, or damaged. The application rates for fertilizer packets shall be one packet for each inch of tree trunk caliper.

WATERING

1. After placing each layer of planting mix, thoroughly water the planting mix in place, without disturbing or "puddling" the mix.

2. After bringing soil in pit to grade and forming the planting saucer, thoroughly soak the tree pit by repeatedly filling the pit with water to the full depth of the saucer, allowing the water to completely percolate into the soil between fillings.
3. All trees must be watered on a regular basis during the establishment period. Each tree shall require 15 gallons of water per week, except during extremely wet seasons determined by the City. For example one tree will require (2) waterings per week. The first watering on Monday at 10 gallons and the second watering on Thursday at 5 additional gallons.
4. During extremely dry seasons each tree will require 20 gallons per week applied in two separate waterings. (For example one tree will require (2) waterings per week. The first watering on Monday at 10 gallons and the second watering on Thursday at 10 additional gallons.) Water shall be applied slowly at the root ball to prevent runoff and erosion of soil. Additional water shall also be applied in the riser of the aeration-watering loop.
5. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct.

MULCHING

1. Apply a three inch layer of mulch (after settlement) around the tree. This area shall be at least six feet in diameter around the trunk of the tree. Mulch shall not come in contact with the trunk of the tree or the root flare. Mulch should be two to three inches from the trunk.
2. Place mulch immediately after planting. No tree planting pit shall be left for any longer than thirty minutes without mulch. No mulch material shall be applied prior to the initial watering of plant materials upon installation.

OPERATIONS

This section of the manual deals with the activities of the Division of Urban Forestry. It provides information on personnel and the tasks they are assigned to complete. The method and nature of requests received by the Division is summarized. Processes are provided for customer service. The use of technology as it relates to managing the urban forest is outlined. The specific operating procedures for tree emergencies are provided, in addition to the mitigation of such events. The relationship between the Division of Urban Forestry and other City Departments and other agencies are outlined with specific strategies for better cooperation and communication.

URBAN FORESTRY OPERATIONS

The City of Newton's Division of Urban Forestry is the lead agency in the City for the care of public trees. The Division is part of the Department of Parks and Recreation. The Department of Parks and Recreation is lead by a Mayoral appointed Commissioner. By City ordinance the Commissioner of Parks and Recreation is the Tree Warden and has ultimate authority over City trees. The actual care and custody of the City's trees is placed in the hands of the Director of Urban Forestry.

The Director along with their assistant is responsible for the inspection and maintenance of all City owned trees. They use contracted services to prune, remove and plant trees throughout the City.

The Director of Urban Forestry's duties include:

- Creation and implementation of policy
- Technical inspection of trees
- To communicate and respond to citizen requests
- Review City projects that impact trees
- Advise other City Departments and agencies on tree issues
- Develop technical maintenance and planting specifications
- Serve on, and work with various City Committees, including the Urban Tree Commission and Integrated Pest Management Committee
- Perform technical reviews of Tree Preservation Ordinance applications
- Issue permits, warnings and fines related to the Tree Preservation Ordinance.
- Survey and locate new planting locations
- Manage tree planting contracts
- Manage and review urban forestry budget
- Coordinate all Tree Emergency activities
- Oversee tree maintenance work including in-house work and contracted services

The Assistant Superintendent of Urban Forestry's duties include:

- Advise on policy issues
- Perform general tree inspections
- To communicate and respond to citizen requests
- Manage citizen requests
- Inspect and monitor private property as it relates to the Tree Preservation Ordinance
- Insure proper Tree Ordinance compliance
- Responsible for the coordination of all daily tree maintenance activities
- Assign work to private tree contractor and in-house staff
- Directly respond to tree related emergencies and their timely resolve

INTERDEPARTMENTAL/ OTHER AGENCIES RELATIONSHIP AND COMMUNICATIONS

Although primarily managed by the Division of Urban Forestry, many other departments and agencies have an effect on Newton's trees. From the Department of Public Works to the City Solicitor's Office to NStar Electric, all have an effect on Newton's trees, directly or indirectly. To be managed effectively the Division of Urban Forestry cannot operate in a vacuum. It must work with different City agencies and organizations. Different perspectives and views must be considered when decision making. Each organization sees the green infrastructure differently.

This section outlines the primary organizations that the Division of Urban Forestry interacts with. Over the next five years the Urban Forestry Commission and Division of Urban Forestry will use this outline of organizations to sets goals and objectives that will aid in working toward a more holistic approach to managing the urban forest. By approaching situations in their entirety the end product will be more useful, efficient and cost effective.

City of Newton Departments:

Department of Public Works

Roads and trees share much of the same space in Newton. The Department of Public Works has a tremendous impact on the health and sustainability of our trees. In an ideal setting the grass strip where the trees are growing would be wider than they currently are, or the trees would be growing on the opposite side of the sidewalk, set back out of harms way. This is not the case in most locations in Newton. For this reason the street and sidewalk reconstruction can place trees in jeopardy.

To reduce the damage to trees during construction projects the Division of Urban Forestry and Public Works are to communicate on a periodic basis. Prior to the start of the construction season Public Works is to provide the Division of Urban Forestry with the list of all major road and sidewalk reconstruction projects. Urban Forestry is to inspect these locations for major tree conflicts and consult with Public Works. As funding allows, Urban Forestry will be responsible for pruning all the trees that require it, to conduct a public hearing on any healthy trees to be removed and remove any hazardous trees that warrant immediate removal. All practical measures are to be taken to avoid the removal of healthy, well placed safe trees. The tree protection measures outlined in this manual are to be followed. Periodically during the construction season, while conducting sidewalk, water pipe or sewer pipe repairs, trees may conflict with work. During these instances the Supervisor from Public Works will be responsible for contacting Urban Forestry. Urban Forestry will then inspect the situation and with Public Works to resolve the conflict

Other Departments and agencies

Planning and Development - Special permit reviews; review of community development projects; and issues on conservation land.

Inspectional Service Department - Tree Preservation Ordinance reviews and enforcement.

City Solicitor's Office - Claims for and against the City, Tree Preservation Ordinance enforcement.

Purchasing - Bidding and procurement of goods and services

Outside groups and agencies:

NStar electric - Utility line clearance and tree emergencies

Massachusetts Dept. of Cons. & Rec. - Grants and technical assistance

Massachusetts Turnpike Auth. - Tree planting

Massachusetts Water Resource Auth. - Shared responsibility for vegetation

Massachusetts Highway Division - Responsible for trees on certain state roads

COMMUNITY FORESTRY

Community forestry in Newton is the cultivation of public understanding and appreciation for the values and benefits derived from trees. It strives to foster community support and effective volunteerism through education and public outreach. It emphasizes the need to engage private enterprise and homeowners in the preservation and management of urban trees and forests. This section outlines some of the major components of community forestry, including: public information campaigns, events, activities and direct community involvement, which includes citizens maintaining trees.

PUBLIC INFORMATION CAMPAIGN

Generating public support is a major component to any public program. This section outlines how the Division of Urban Forestry and the Urban Tree Commission intend to inform the public of the importance of Newton's Urban Forest.

Brochure series – developed and utilized a series that discusses pertinent information relevant to the citizens of Newton. It should draw on information from other tree advocacy organizations, practical experience of the City, and past existing documents.

Monthly newspaper articles – written by members of the Urban Tree Commission in cooperation with the Director of Urban Forestry. These articles should contain timely information related to trees and upcoming events. It will allow readers to understand our urban environment.

Comprehensive web page – containing information on the entire Urban Forestry Program and operation. It should contain the same information as the brochure series. People will have the ability to access all the information contained in the City's "Urban Forestry Manual". As technology allows, people will be able to request information and services through on-line request forms. People will be able to take a "virtual tour" and view Newton's historic trees.

EVENTS AND ACTIVITIES

Events and activities are a valuable tool for garnering public support. People learn the importance of our urban trees when they have the opportunity to participate in outdoor activities.

- Annual Arbor Day celebration highlighting the importance of trees and focusing on education
- Tree Walks focusing on specific issues. They will be opportunities for the public to meet staff members and "experts" in the field of tree care. Participants will gain an appreciation of how the City manages its trees. Walk may take place prior to an area being pruned. Prior to tree planting a walk might be conducted that highlights the proper care of the new trees. Fall foliage walk and Historical tree searches could also be conducted.
- Classes and Seminars will be held that are more in-depth than the tree walks. Classes may highlight the basics of trees, tree biology, tree care and tree planting. Information learned here may lead to active citizen involvement in managing Newton's urban forest. (see further information under Community Involvement).

SCHOOL PROGRAMS

An important way to promote community forestry is through schools and schoolchildren. The children learn to become tree and environmentally conscious, and their parents often also get involved and become more aware along the way. School programs Newton would like to develop include:

- Arbor Day events
- GIS work
- Adopt-a-Tree
- Lookouts for over-mulching
- Seedling trees as prizes at events, races, etc.

COMMUNITY INVOLVEMENT

A key way to encourage the people of Newton to take ownership of Newton's trees is to encourage their direct participation in the care of the trees. There are different levels and ways that the citizens can get involved.

Tree stewards program. This program will be used to educate participants in proper tree care practices. They will learn about Newton's trees, proper pruning and maintenance practices, as well as planting techniques. Upon completion of the program participants will receive a certificate of completion. The ultimate goal of this program is to augment the City's tree care program with volunteer help.

Program volunteers may be utilized to perform basic tree maintenance tasks, such as:

- Weeding and mulching
- Pruning and training of young trees
- Monitoring and reporting on tree issues and notifying the Division of any problems
- Scout out and suggest possible planting locations
- Plant community trees
- Act as a liaison in their community for tree issues
- Potential watering teams during dry spells
- Help develop and administer programs such as tree sales
- Staff tree-related booths at city-wide events

TREE POLICIES

The Urban Tree Commission and the Division of Urban Forestry will work actively over the next five years to develop, expand and widen the policies in this section.

Information on Tree Policies will be available in the following ways:

- published in the Tree Manual
- published in the official records of the Urban Tree Commission and the Parks and Rec Department
- published in the Tree section of the City's website
- outlined in periodic articles in the environmental section of the Newton Tab
- outlined in a brochure distributed at Inspectional Services with info on building permits
- outlined in a brochure available for pickup at City Hall front desk and at the Newton Library
- presented in periodic workshops on Community Forestry issues

Index of Tree Policies (in alphabetic order):

- Adopt-a-Tree program
- Damage to Trees on City Property
- Decoration of Trees on City Property
- Holiday lighting
- Information on Tree Policies
- Maintenance of Trees
- Mulching
- Notification procedures to homeowners
- Off-berm planting program
- Planting of Trees on City Property
- Planting of Trees on Private Property
- Posting of Signs or other Damage to Trees on City Property
- Pruning of Trees on City Property by City workers
- Pruning of Trees on City Property by Utility companies
- Pruning of Trees on City Property by Homeowners
- Pruning of Trees on Private Property
- Public Shade Tree state law (Chapter 87)
- Removal of Trees on City Property
- Removal of Trees on Private Property
- Roots
- Safety Hazard Tree Issues
- School tree programs
- Signage posted on Trees on City Property
- Tree Steward program and policy
- Vandalism of Trees on City Property
- Watering of Trees on City Property

Policy Section

Adopt-a-Tree program

This program is part of Newton's Tree Steward Program. In it neighborhood volunteers "adopt" a newly-planted city tree and share responsibilities of:

- watering the tree during dry spells (see Watering section of Tree Manual)
- watching over the tree for damage
- arranging for pruning if/when needed

Damage to Trees on City Property

Street trees, often located on City property on the berm between the street and sidewalk, are protected by Chapter 87 of Massachusetts General Law, the Public Shade Tree Law. Chapter 87 protects trees from being removed by unauthorized individuals, and protects them from damage due to vandalism and damage due to signs or utility lines being affixed to them. Chapter 87 of Massachusetts General Law establishes a minimum level of penalties for violation. See section on Chapter 87 for details.

Reporting of damage to Trees on City property should be made to the Newton Police (for vandalism) and to the Forestry Department. Fines will be levied and restitution of damages will be sought.

Newton's Public Tree Ordinance, to be developed, will further protect public trees from damage, and will include more severe penalties for violation.

Decoration of Trees on City Property

Decorating Trees on City Property, including affixing of holiday lights, is not permitted except with the permission of the Forestry Department. Any work that is authorized must be carried out so as to not damage the tree, and must be done by authorized workers with full liability and workers compensation insurance.

Holiday lighting

See Decoration of Trees section.

Information on Tree Policies

Information on Tree Policies is available in the following ways:

- published in the Tree Manual
- published in the official records of the Urban Tree Commission and the Parks and Rec Department
- published in the Tree section of the City's website
- outlined in periodic articles in the environmental section of the Newton Tab
- outlined in a brochure distributed at Inspectional Services with info on building permits
- outlined in a brochure available for pickup at City Hall front desk and at the Newton Library
- presented in periodic workshops on Community Forestry issues

In addition to increasing awareness of tree policies, these media will also be used as to promote tree activities and public awareness (tours, activities, events, training sessions, etc.).

Maintenance of Trees

This section will contain reference to the Tree Manual sections on Evaluation & Inspections, Pruning, Specialized Care, Fertilization, Tree Support Structures and Repair, Disease and Insects, and Protecting Trees During Construction.

Mulching

Proper mulching is important to tree and shrub health. Piling too much mulch against the trunk of a tree will damage its bark and lead to rot and disease. Newton has developed a mulching brochure, available for download on the City's website. Homeowners and businesses owners are strongly encouraged to follow the recommended practices, and to stop their landscaping companies from using improper practices.

Notification procedures to homeowners

The Forestry Department will communicate to homeowners prior to work being done on the street trees in front of their homes. The usual method of communication will be a "door hanger" that briefly describes the work to be done and gives the Forestry Department phone number. Standards for such notification are as follows:

- One week prior to preservation pruning being done on a street
- One week prior to response pruning unless a safety issue is involved (see below)
- One week prior to tree removal unless a safety issue is involved (see below)

If the Forestry Department deems there to be a hazardous condition requiring immediate pruning or removal of a tree for the protection of public safety, notification to homeowners may be less than the above standards, but will be as much as is possible under the circumstance.

Off-berm planting program

The berm, the narrow strip of land between street and sidewalk, is City property, but is often not the best place to plant a city tree. The lack of sufficient room for roots, lack of sufficient water, the overhead utility lines in the tree's way, and the salt and pollution from the street, all make for terrible growing conditions.

The best place to plant a street tree is OFF the berm. Off the berm, they have space for their roots, more access to water, do not get tangled in overhead utility lines, and are less subject to salt and injury from cars. The ideal place to plant a street tree is within the homeowner's lot, 5 to 10 feet in from the sidewalk. From that location, the tree canopy will still shade the street and sidewalk, but the tree will be healthier, happier, and longer lived.

Homeowners are encouraged to plant trees off-berm. See Tree Planting section for outline of appropriate trees and planting instructions. To encourage off-berm planting, the Forestry Department has the following priorities for tree planting:

- Off-berm tree paid for, planted, and subsequently cared for by homeowner or adopt-a-tree group
- Off-berm tree planted by City, but paid and subsequently cared for by homeowner or adopt-a-tree group
- Off-berm tree paid and planted by City and subsequently cared for by homeowner (the Forestry Dept will try to prioritize these requests higher than regular street tree requests, but cannot guarantee timeliness of planting.
- Berm tree plantings paid and carried out by City based on department neighborhood priorities and planting plans.
- Berm tree plantings paid by homeowner, and carried out by City based on homeowner requests.
- Berm tree plantings paid and carried out by City based on homeowner requests.

Planting of Trees on City Property

Tree planting on City property is done in several ways:

- (1) by the Forestry Department as part of its annual planting plan
- (2) by the Forestry Department using the Tree Preservation Funds as part of a neighborhood plan to offset the impact of a development project
- (3) by the Forestry Department in connection with an Off-Berm planting request (see Off-Berm program) or a School Dept project.
- (4) by the Forestry Department as part of a state Mass ReLeaf grant
- (5) by the Department of Public Works as part of a street or highway construction project
- (6) by Homeowners with the Permission of the Forestry Department

Homeowners are encouraged to plant trees on their own private property, and most especially on their property 5-10 feet from the sidewalk, where the tree becomes an Off-Berm street tree, shading the sidewalk/street while providing the tree with a better growing environment. See the Off-Berm program. Homeowners who plant off-berm are given priority assistance from the Forestry Department.

Homeowners who wish to plant trees on City Property, i.e. on the berm outside their property or on a city park/triangle, etc. may do so at their own expense and with the permission of the Forestry Department. (This may be the most appropriate option when off-berm planting is not possible.) Choice of tree must be approved by the Forestry Department and must be appropriate to the space available, overhead utility lines, etc. Planting instructions and advice will be provided by the Forestry Department, but unfortunately planting labor cannot be provided by Forestry. By proceeding with planting their own street tree, homeowners avoid the long delays in obtaining a tree that currently exist due to budget constraints, and are greatly contributing to Newton's urban forest and to the health and beauty of the street and city.

Planting of Trees on Private Property

Homeowners and businesses are strongly urged to plant trees on their own property. These trees enhance the urban forest, and provide all the shading and environmental benefits of a street tree. Grown away from the harsh conditions of the street, they also are healthier and longer-lived than are street trees.

See the Off-Berm program for incentives to plant on private property, 5-10 feet away from the sidewalk.

Tree lists, planting instructions, and maintenance tips are available in Newton's tree manual as well as on the City's web site.

Posting of Signs or other Damage to Trees on City Property

(same text as "Damage to ...")

Street trees, often located on City property on the berm between the street and sidewalk, are protected by Chapter 87 of Massachusetts General Law, the Public Shade Tree Law. Chapter 87 protects trees from being removed by unauthorized individuals, and protects them from damage due to vandalism and damage due to signs or utility lines being affixed to them,. Chapter 87 establishes a minimum level of penalties for violation. See section on Chapter 87 for details.

Reporting of damage to Trees on City property should be made to the Newton Police (for vandalism) and to the Forestry Department. Fines will be levied and restitution of damages will be sought.

Newton's Public Tree Ordinance, to be developed, will further protect public trees from damage, and will include more severe penalties for violation.

Pruning of Trees on City Property by City workers

Pruning of City Trees, whether done by the Division of Urban Forestry, a city contractor, the Public Works Department, etc., must follow the guidelines in the Tree Manual. Proper choice of limbs to be removed, and proper cutting technique, is critical to tree health. The City of Newton will not pay for work that does not meet these standards.

Pruning of Trees on City Property by Utility companies

Pruning guidelines for utility companies have been established. In some cases these guidelines have been built into the City's contract with the company. In other cases these guidelines are recommendations only, for the electric utilities have authority under state law to prune trees as needed in order to prevent or repair a power line disruption.

The recommended guidelines say that the cable company will establish a point person, it will have a certified arborist review the work daily or weekly, any pruning work needed will meet the industry standard such as ANSI300 pruning Specifications, Section Z133 and the Massachusetts Tree Warden and Foresters' Association Tree Trimming Guidelines for Utility Line Clearance update June 2000 (draft enclosed). All work will be done under the supervision of a certified arborist that will be responsible for the supervision of the entire tree pruning work. The Cable Company may not remove any tree (if a tree is removed then it shall be replaced within one year with an approved tree on a caliper-to-caliper basis, or a payment in lieu of planting must be made). The Cable Company may not remove any tree. If a tree is found to be a hazard, or risk to public safety the Cable Company will inform the tree warden of the location of the said tree. The tree warden will then take the necessary action needed to protect the safety of the public. To give utility lines clearance, utility companies are allowed to make a circular uniform shape not exceeding a maximum of a six foot total diameter (3 three feet on either side of the tree's central stem). This clearance shall be as small as possible. Any extra clearance shall only be authorized by the city's tree warden. If branches are cut back, a proper arboricultural cut must be made at the side branch that is at least one third the diameter of the limb at the point of cut.

Pruning tools should be designed and maintained to provide proper cuts. Pole mounted circular saws and pole mounted chain saws are not to be used to cut branches more than two inches in diameter. No live branches greater than six inches in diameter maybe cut without prior approval of the tree warden or his deputy. All dead, split or dangerous limbs greater than four inches in diameter shall be removed from the entire tree if the city-owned tree is to be trimmed in any manner for clearance. Utility companies are also responsible for removal of waste.

Any problems with utility company tree work should be brought to the attention of the Forestry Department.

Pruning of Trees on City Property by Homeowners

While the Forestry Department has a Preservation Pruning plan that covers the entire city, there is currently only enough funding to make very slow progress on the plan. To expedite the process, and to maintain the health and beauty of the street tree adjacent to their property, homeowners may choose to arrange and pay for the work themselves. This may be done only with the permission of the Forestry Department, which will also have to log the work being done in its GIS tracking system. The work must be done by a fully insured qualified contractor, must be supervised by a Certified Arborist, and must be to industry standards as outlined in the Tree manual. The Forestry Department has a list of qualified companies in the area.

Pruning of Trees on Private Property

Homeowners wishing to prune their private trees are encouraged to pool their service needs with their neighbors and obtain volume discounts from local tree companies

Removal of Trees on City Property

Trees are a considerable asset to the City of Newton. They are an important public resource that enhances the quality of life and the general welfare of the City. Trees enhance the unique character, physical, historical and aesthetic environment of Newton. They provide endless benefits to all who live, work and visit the City of Newton.

The City discourages the removal of trees for anything other than safety related issues. It is the goal of the City to maintain and keep as many shade trees on the streets as possible for the benefit and enjoyment of all. The City recognizes that there are certain instances where people may want to have the tree adjacent to their property removed. The following outlines the process for the request to remove a City street tree.

1. An application for street tree removal must be filled out and filed with the Tree Warden (Newton Parks and Recreation Department, 70 Crescent Street, Auburndale, MA 02466)
2. The tree will be inspected by an Urban Forestry Division staff member.
3. Per Chapter 87 of Massachusetts General Law a tree hearing will be held. If at or before the hearing an objection in writing is received by the Tree Warden then the tree can not be removed. In this event the applicant can either accept the denial or appeal it to the Mayor.
4. The applicant must have prior approval and all necessary permits from all the other City agencies, including but not limited to the Inspectional Services Department and the Engineering Department.
5. If and when approval is granted for the removal of the tree, the applicant is required to pay a fee into the Tree Fund equal to the current cost to the City for the removal of the tree.
6. The City also requires that the applicant pay for the replacement of the tree, based on the “Tree Removal/ Replacement Chart”.
7. Once the payment for removal and replacement has cleared, the removal of the tree will be scheduled.
8. The planting of the trees will be executed during the next available planting cycle. Replacement trees shall be planted at locations determined by the Tree Warden, paying special attention to the area where the tree was removed.

Example: An applicant requests that the City remove a 15” street tree in front of their house so a new driveway can be installed. The removal is approved at the hearing. The applicant must now pay the City \$224.00 (the current price for the removal of a 15” tree) for the removal of the tree. According to the “Tree Removal/ Replacement Chart” five trees are to be planted when a 15” tree is removed. The current cost to the City for planting a 2.5” tree is \$350.00, therefore the cost of replacing the single 15” tree with five 2.5” trees is \$1,750.00. The total amount the applicant will be required to pay before the City will remove the tree is \$1,974.00

| Size of tree to be removed (DBH)* | Cost of Removal | Number of trees to be planted | Cost of Planting | Total Cost for Tree Removal |
|-----------------------------------|-----------------|-------------------------------|------------------|-----------------------------|
| Up to 5” | \$ 224.00 | 2 | \$ 700.00 | \$ 924.00 |
| 6” to 11” | \$ 224.00 | 3 | \$ 1,050.00 | \$ 1,274.00 |
| 12” to 17” | \$ 224.00 | 5 | \$ 1,750.00 | \$ 1,974.00 |
| 18” to 23” | \$ 322.00 | 7 | \$ 2,450.00 | \$ 2,772.00 |
| 24” to 29” | \$ 412.00 | 10 | \$ 3,500.00 | \$ 3,912.00 |

| | | | | |
|------------|-----------|----|-------------|-------------|
| 30" to 35" | \$ 555.00 | 12 | \$ 4,200.00 | \$ 4,755.00 |
| 36" to 41" | \$ 669.00 | 14 | \$ 4,900.00 | \$ 5,569.00 |
| Over 41" | \$ 669.00 | 17 | \$ 5,950.00 | \$ 6,619.00 |

- DBH - Diameter at Breast Height is the diameter of a tree 4.5 feet above ground

Current Cost of Street Tree Planting: \$ 350.00 per tree

To file an application or receive more information related to the Application for Street Tree Removal please contact the Director of Urban Forestry at the Newton Parks and Recreation Department. (617) 796-1500

Removal of Trees on Private Property

The City of Newton has an ordinance that guides tree issues on private property. The Tree Preservation Ordinance is geared to providing an incentive for developers to protect and retain large trees, rather than clear-cutting an entire lot prior to building. Such developers must protect the larger trees, or if they do not, must pay into a Tree Preservation Fund. The Ordinance does not prevent the typical homeowner, who lives in or rents out his/her home, from maintaining or removing any trees on his/her private property.

Safety Hazard Tree Issues

Safety issues should be reported immediately to Forestry, Department of Public Works, or the Police Department.

School tree programs

School programs increase youth involvement and education.

- Arbor Day events
- GIS work
- Adopt-a-Tree
- Lookouts for over-mulching
- Seedling trees as prizes at events, races, etc.

Signage posted on Trees on City Property

(Same text as “Damage to...”)

Street trees, often located on City property on the berm between the street and sidewalk, are protected by Chapter 87 of Massachusetts General Law, the Public Shade Tree Law. Chapter 87 protects trees from being removed by unauthorized individuals, and protects them from damage due to vandalism and damage due to signs or utility lines being affixed to them,. Chapter 87 establishes a minimum level of penalties for violation. See section on Chapter 87 for details.

Reporting of damage to Trees on City property should be made to the Newton Police (for vandalism) and to the Forestry Department. Fines will be levied and restitution of damages will be sought.

Newton’s Public Tree Ordinance, to be developed, will further protect public trees from damage, and will include more sever penalties for violation.

Tree Steward program and policy

Newton will begin a Tree Steward program, similar to that in place through the State Department of Environmental Management Community Forestry program. The program educates a group of dedicated volunteers on such topics as:

- ecosystem approach to community forestry
- tree growth, physiology, and identification
- planning and designing the urban forest
- managing the urban forest: tree care, conserving the canopy, planting programs, community involvement
- legal and policy issues, funding, developing partnerships

The Tree Stewards then put their knowledge to work in helping to carry out the activities of Newton’s Tree Plan (such as hazard reporting, watering, adopt-a-tree, developing and running community programs, staffing events such as tree sales, etc.)

Vandalism of Trees on City Property

(Same text as “Damage to...”)

Street trees, often located on City property on the berm between the street and sidewalk, are protected by Chapter 87 of Massachusetts General Law, the Public Shade Tree Law. Chapter 87 protects trees from being

removed by unauthorized individuals, and protects them from damage due to vandalism and damage due to signs or utility lines being affixed to them,. Chapter 87 establishes a minimum level of penalties for violation. See section on Chapter 87 for details.

Reporting of damage to Trees on City property should be made to the Newton Police (for vandalism) and to the Forestry Department. Fines will be levied and restitution of damages will be sought.

Newton's Public Tree Ordinance, to be developed, will further protect public trees from damage, and will include more severe penalties for violation.

Watering

See Watering section of Tree Manual for guidelines on how much water trees need.

After winter snow with its embedded salt has melted, the salt around tree roots needs to be flushed away. Early Spring is a good time for deep watering.

Also, as a result of inadequate water during a dry spell, trees will suffer, and young trees not fully established (i.e. less than 3 years old) may die. Tree-planting contractors are responsible for tree health during the two-year warranty period, but the Forestry Department must be forceful in instructing the companies to come care for their newly-planted trees. Other new trees may be handled by Adopt-a-Tree groups. For all the other at-risk trees, however, watering teams need to be mobilized during dry spells to deep-water trees

Watering teams will be a program developed as part of the Tree Steward program.

LEGAL ISSUES

In today's society there are many legal issues. It is no different when managing trees in the public environment. This section outlines the various rules, laws and ordinances that govern the management of trees in Newton, including the Tree Preservation Ordinance, State laws and City Ordinances. The law also plays a part in claims filed against the city and by the City.

CITY TREE ORDINANCES

The ordinances of the City of Newton set out the legal authority for roles and responsibilities for management of the urban forest. Chapter 21, Article I identifies the Parks and Recreation Commissioner as the **Tree Warden** (as defined by state law) with responsibility for “care and control of all public shade trees and the planting, trimming and cutting thereof.” [Sec. 21-1 (c)]

Paragraph 9 of Article I prohibits **climbing or posting signs** on trees in public parks and grounds. [Sec. 21-9]

Paragraph 14 of Article I deals with the **spraying** of trees for Dutch Elm disease, a problem that has receded into our distant past. [Sec. 21-14]

The **Urban Tree Commission** was created by Chapter 21, Article III. This ordinance spells out the purpose, duties and membership of the Commission. [Sec. 21-60, 61, 62]

Chapter 20, Article IV outlines the terms of the **Tree Preservation Ordinance**, passed in 1999. This landmark ordinance was the first of its kind in the Northeast United States and requires that developers make reasonable efforts to preserve trees on development sites. When trees cannot be saved, the ordinance requires that replacement trees be planted on site according to an inch-per-inch ratio of trees lost to trees replaced. Money equivalent to replacement cost must be paid to a Tree Replacement Fund if replacement trees cannot be planted on the development site. [Sec. 20-31 through 20-39]

Paragraph 60 of Article V forbids **injuring, defacing or damaging** city-owned trees. [Sec. 20-60]

Chapter 26, Article I indicates that trees and shrubs may be removed in conjunction with **street reconstruction** only if a hearing is held as required by Chapter 87 of the Massachusetts General Laws. The ordinance specifies who must be notified in this circumstance. [Sec. 26-28]

The specifics of these ordinances follow:

Chapter 21

PARKS, RECREATION AND PUBLIC GROUNDS

ARTICLE I. IN GENERAL

Sec. 21-1. Parks and recreation commissioner —Designation; duties generally; compensation.

(a) The office of commissioner of parks and recreation and the department of parks and recreation are established. The commissioner shall be an officer of the city and the provisions of the law for the appointment and removal of heads of departments shall be applicable to such office. He shall have under his immediate control and direction such assistants and employees as may from time to time be duly authorized. He shall receive for his services such salary as shall be fixed by the mayor and board of aldermen.

(b) The parks and recreation commissioner shall have charge of maintenance, care and management of playgrounds and all recreation lands, except to the extent conferred upon the Parks and Recreation Commission, pursuant to Chapter 426 of the Acts of 1982 and G.L. c. 45. He shall have and exercise the power conferred by G.L. c. 45, sec. 14, except that of taking by eminent domain. He shall also be responsible for the control and supervision of the parks and recreation department. The commissioner also shall have charge of the maintenance, care and management of burial grounds and the grounds about public buildings and the maintenance of lands under the jurisdiction and control of the conservation commission. The commissioner shall consult with the conservation commission regarding the manner of maintaining lands under the commission's jurisdiction.

(c) The parks and recreation commissioner shall also be designated as the local superintendent of insect pest control pursuant to the G.L. c. 132, sec. 13. He shall perform the duties of tree warden and have the care and control of all public shade trees and the planting, trimming and cutting thereof. He shall make and keep an itemized account with vouchers, showing the definite amounts expended for the purposes named in the General Laws for the suppression of insects. He shall, under the direction of the mayor, cause notices as required by the statutes to be sent to owners of parcels of land infested with such insects. He shall make lists of the amounts expended on spraying as provided by law, containing the names of the owners of estates, the locations thereof and the amounts expended thereon. (Rev. Ords. 1973, § 2-125, § 19-39; Ord. No. 90, 10-6-75; Ord. No. 190, 12-20-76; Ord. No. 220, 6-7-77; Ord. No. 233, 8-15-77; Ord. No. 317, 2-20-79; Ord. No. R- 267, 10-18-82; Ord. No. T-318, 12-6-93; Ord. No. V-289, 3-20-00)

Sec. 21-9. Climbing, posting bills on trees.

No person shall climb a tree in any park or upon other public grounds, nor post a bill, nor place a sign upon or around any tree in any park or upon other public grounds of the city. (Rev. Ords. 1973, § 19-108)

Sec. 21-14. Spraying for insects.

(a) The commissioner of parks and recreation may, at the request of owners of private property in the city, spray trees and shrubs thereon for the purpose of destroying or suppressing insects or pests and preventing or controlling the spread of Dutch Elm Disease. The commissioner of parks and recreation may establish rules and regulations governing such spraying, including the time and manner of making requests and payments therefor.

(b) There shall be charged for each such spraying an amount determined by the size of the lot upon which such spraying is done according to the following table:

Size of lot (square feet)

Amount under 7,500 \$ 5.00

7,500 to 9,999 7.50

10,000 to 14,999 10.00

15,000 to 19,999 12.50

20,000 to 24,999 15.00

25,000 and over the cost of labor and materials employed for the purpose as estimated by the commissioner.

(c) The amount to be charged shall in each case be paid to the parks and recreation commissioner before the spraying is done. (Rev. Ord. 1973, § 2-129, § 19-44; Ord. No. 90, 10-6-75; Ord. No. R-267, 10-18-82)

Chapter 21

PARKS, RECREATION AND PUBLIC GROUNDS

ARTICLE III. URBAN TREE COMMISSION

Sec. 21-60. Establishment and purpose.

There is hereby established the urban tree commission to advise and assist the tree warden in carrying out his duties and responsibilities. The purpose of the urban tree commission shall be to advise the tree warden, the mayor, the board of aldermen and the general public on all matters concerning public trees, including but not limited to, the selection of trees for planting, planting and pruning of trees, the treatment of disease, and the preservation and regular maintenance of trees. (Ord. No. V-71, 3-4-96)

Cross reference—Tree warden, Ch. 21, Art. I, § 21-1

Sec. 21-61. Powers and duties.

(a) The commission shall issue a city tree maintenance manual which shall set forth the standards for planting and maintaining all public shade trees in the city and which shall also set forth the general policies in regard to those trees. The commission shall regularly revise and distribute the tree maintenance manual and review the implementation of the practices and policies it enunciates.

(b) The commission shall annually review the needs of various geographical areas of the city for the planting and replacement of trees and shall recommend priorities based on the annual review to the tree warden and superintendent of urban forestry or such other municipal officials as may hereafter be assigned the duties of tree warden and superintendent of urban forestry.

(c) Whenever a hearing is required to be held in regard to cutting down or removal of a tree, the commission may offer written recommendation(s) to the tree warden.

(d) Whenever the tree warden prepares an impact statement on the effect of any construction project on existing trees or the ability to plant trees in that area in the future, the tree commission may submit its advice as part of a submission to appropriate city agencies and/or to the board of aldermen for its review of the project. (Ord. No. V-71, 3-4-96)

Sec. 21-62. Composition and organization.

(a) The commission shall consist of twelve (12) voting members who shall serve for three year terms in accordance with Section 2-8 of these Revised Ordinances. Ten (10) members shall be appointed by the mayor in accordance with Section 3-3 of the Charter. The commissioner of parks and recreation, in his capacity as tree warden, or such other municipal official as may hereafter be assigned the duties of tree warden, shall serve, ex officio, as the eleventh voting member. The superintendent of urban forestry, or such other municipal official as may hereafter be assigned the duties of superintendent of urban forestry, shall serve, ex officio, as the twelfth voting member. Three (3) of the initial appointees shall serve for a term of one year; three (3) of the initial appointees shall serve for a term of two years; and four (4) of the initial appointees shall serve for a term of three years.

(b) Members of the commission, so far as practicable, shall be selected so as to provide representation of citizens with expertise or interest in the preservation and care of trees. Consistent with this requirement, whenever a vacancy occurs on the commission, the commission shall offer a list of prospective members for the mayor's consideration in making appointments.

In making the initial appointees to the urban tree commission, the board of aldermen requests that the mayor consider any active members of the urban tree task force who wish to be appointed, it being the will of the board of aldermen that the urban tree commission be established as the successor to the urban tree task force. The board of aldermen also requests that the mayor also consider appointing any such members of the urban tree task force to the longest terms of office available prior to appointing persons who are not currently serving on the urban tree task force. (Ord. No. V-71, 3-4-96)

OFFENSES AND MISCELLANEOUS PROVISIONS

ARTICLE IV. TREE PRESERVATION

Sec. 20-31. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Aggregate diameter. The combined diameter of a multiple trunk tree measured at breast height.

Building. The term "building" shall be as defined in section 30-1.

Certified arborist. An arborist certified by the Massachusetts Arborists Association, or any successor organization.

Diameter breast height (DBH). The diameter of the trunk of a tree 4½ feet above the existing grade at the base of the tree.

Drip line. A vertical line running through the outermost portion of the crown of a tree and extending to the ground.

Exempt lot. A lot which meets either of the following criteria at the time that the tree removal permit application is filed or an exterior work permit is sought or at the time that trees are being removed:

(a) the lot is occupied and used primarily as a dwelling for up to four (4) families; or

(b) the lot is vacant and is adjacent to a lot used solely as an owner occupied dwelling for up to four (4) families and owned by the same person and the owner of such vacant lot wishes to remove trees from such vacant lot in order to construct a dwelling for up to four (4) families which said owner will occupy.

Exterior work permit. A permit or approval which is required in order to perform work on a vacant lot or to the exterior of a building on a lot, including, but not limited to the following: a building permit; a special permit for grade change of more than three (3) feet pursuant to section 30-5(b)(4); curb cut and street opening permits; an order of conditions; certificates of appropriateness, nonapplicability, or hardship; a demolition permit pursuant to section 22-44; site plan approval pursuant to section 30-23; subdivision approval; a special permit pursuant to section 30-24; a comprehensive permit.

Person. Any person, firm, partnership, association, corporation, company or organization of any kind including, but not limited to, the person removing a protected tree as well as the owner of the real property from which the tree is removed. The definition of "person" shall not include the City of Newton.

Protected tree. Any tree having a diameter of eight inches (8") DBH or larger or having an aggregate diameter of fifteen inches (15") DBH or larger and which is located on land subject to the provisions of section 20-32.

Pruning standards: Standards for pruning as defined in the City of Newton Tree Management Manual, 1995 and any future amendments or revisions to the same.

Remove (including removing and removal): The cutting down of any protected tree and all other acts which cause the actual removal or the effective removal through damaging, poisoning or other direct or indirect actions resulting in the death of a protected tree, including, but not limited to, excessive or improper pruning.

Tree Manual: The City of Newton Tree Management Manual, 1995, and any future amendments and revisions to the same. (Ord. No. V-275, 12-6-99)

Tree Warden: The commissioner of parks and recreation or his designee.

Editor's note—Ordinance V-275 contained a lengthy and detailed Declaration of legislative findings and intent, which is on file in the records of the Board of Aldermen.

Sec. 20-32. Applicability, permit or certificate of exemption required.

(a) *Applicability:* The terms and provisions of this article shall apply to any protected tree located on land within the city not owned by the city, the commonwealth, or any independent authority of the commonwealth, or by the federal government except protected tree(s) located on an exempt lot.

(b) *Permit, certificate of exemption:* No person shall remove a protected tree located on land subject to the provisions of this article without first obtaining a tree removal permit or a certificate of exemption from the tree warden. Applications shall be made in writing on forms specified by the tree warden. An owner of an exempt lot shall not be required to apply for a tree removal permit, provided, however, that an owner of an exempt lot who seeks an exterior work permit must certify to the tree warden on forms provided by the tree warden that the owner intends to own such exempt lot for at least twelve consecutive months. There shall be no fee for filing a certificate of exemption. (Ord. No. V-275, 12-6-99)

Sec. 20-33. Permit application.

(a) *Contents, fee:* An application for a tree removal permit shall be submitted to the tree warden. The application for a tree removal permit shall be accompanied by a fee in the amount of fifty dollars (\$50.00) and shall include, but not be limited to, the following:

(1) The shape and dimensions of the parcel of real property to be developed, together with the existing and proposed locations of structures and improvements, if any;

(2) A tree plan showing the location, type and size of each protected tree indicating which protected tree(s) are to be removed, and the location, type and size of replacement trees;

(3) The proposed relocation of any existing protected tree with a statement prepared by a certified arborist explaining how each such protected tree is to be relocated and maintained;

(4) The location of existing and proposed underground or overhead utility services, existing and proposed roadways, bikeways, walkways and parking areas;

(5) Any proposed grade changes which might adversely affect or endanger any protected tree with a statement prepared by a certified arborist explaining how each such protected tree shall be protected and maintained;

(6) The proposed method of protecting the remaining protected trees during the course of the construction in accordance with section 20-34, subsection (a).

(b) *Review of permit applications:* The tree warden shall review applications for tree removal permits in accordance with the provisions of this article. The tree warden shall date stamp or otherwise record the date of filing of each application for a tree removal permit. The tree warden shall complete the review of each tree removal permit application no later than ten (10) business days after the submission of a completed application to the tree warden and shall report to the commissioner of inspectional services within ten (10) business days of a request with respect to any tree removal permit application submitted in connection with a building permit as to whether said tree removal permit has been granted or denied. If no such report is received by the commissioner within the above-stated time period, he shall accept an application for a building permit without receipt of such report.

(c) *Standards for grant or denial:* No tree removal permit shall be issued unless one of the following conditions exists:

(1) The protected tree will be relocated or replaced on site.

(2) The protected tree will be replaced by the off-site planting of tree(s) of the same or equivalent size as measured in DBH inches. In the event that a tree of the same or equivalent size as measured in DBH inches cannot be planted, then multiple smaller replacement trees may be planted provided that, wherever practicable, as determined by the tree warden, the total DBH of the replacement trees shall, when added together, equal the total DBH of the protected tree that has been removed. Off-site plantings shall be made in accordance with written priorities established by the tree warden as stated in the Tree Manual. The tree warden may specify that replacement trees be of a minimum caliper when consistent with current accepted practice as stated in the Tree Manual.

(3) The protected tree is interfering with existing structures, utilities, streets, sidewalks or other existing improvements and the relocation of the protected tree is not feasible as certified to the tree warden by a certified arborist.

(4) The protected tree is dead, diseased, injured, in danger of falling, dangerously close to existing structures, is causing disruption of public utility service, is causing drainage or passage problems upon rights-of-way, or poses a threat to pedestrian or vehicular safety.

(5) The removal of the protected tree is necessary and desirable in order to enhance or benefit the health or condition of other trees on the same site as certified to the tree warden by a certified arborist.

(d) *Conditions:* Upon the issuance of a tree removal permit, the tree warden may prescribe in writing such protective measures for existing protected trees as he deems necessary. Before site disturbance may begin, the tree warden may make a determination that the prescribed protective measures have been adequately provided.

(e) *Construction*: Except as provided in a tree removal permit, construction activities under the drip line of a protected tree are prohibited. Activities include, but are not limited to, trenching or grading, storage of materials or equipment, passage of heavy equipment within the drip line and spillage of chemicals or other materials, which are damaging to trees.

(f) *Suspension or revocation*: A tree removal permit may be suspended or revoked at any time by the tree warden upon written notice to the permit holder that the permit holder has failed to comply with either this article or the conditions of the permit. The written notice shall be sent by certified or registered mail, return receipt requested, or by hand delivery and shall provide an opportunity for the permit holder to correct the noncompliance and apply for a renewal of the tree removal permit upon compliance, where practicable. The suspension or revocation of a tree removal permit in accordance with this subsection shall not affect the validity of a building permit issued in reliance upon the issuance (granting) of such tree removal permit nor shall such suspension or revocation be cause for withholding the issuance of a certificate of occupancy.

(g) *Appeal*: If any person is dissatisfied with a decision of the tree warden adversely affecting such person involving the application of this article, such person may file appeal of the tree warden's decision with the mayor or his designee. Said appeal must be in writing and must be received by the mayor or his designee within five (5) business days of the issuance of the tree warden's decision. The mayor or his designee shall make a final decision on the matter within thirty (30) days from the date of receipt of the appeal request. There shall be no further appeal of a matter decided by the mayor or his designee. No protected tree shall be removed while an appeal is pending. (Ord. No. V-275, 12-6-99)

Sec. 20-34. Activities not requiring a permit.

(a) *Pruning*: A permit is not required for the pruning of protected trees. However, in order to prevent excessive pruning and topping of trees and to prevent pruning that will be hazardous to the health and natural appearance of the tree, compliance with approved pruning standards is required, and failure to meet these standards is a violation of this article. The tree warden shall maintain on file at all times a copy of the current edition the Tree Manual and shall make copies of the Tree Manual available for the cost of reproduction upon request.

(b) *Emergencies*: If any protected tree shall be determined to be in a hazardous condition so as to immediately endanger the public health, safety or welfare or cause an immediate disruption of public services and require immediate removal without delay, oral authorization may be given by the tree warden to remove such tree, utilizing such professional criteria and technical assistance as he deems necessary, and the protected tree may be removed without obtaining a written permit as otherwise required by this article. The tree warden shall memorialize in writing each such oral authorization to remove a tree and keep a record of the same.

(c) *Waiver*: The requirements of this article may be waived by the tree warden during the period of an emergency such as a tornado, windstorm, flood or other act of God. (Ord. No. V-275, 12-6-99)

Sec. 20-35. Tree replacement.

(a) *Required*: A protected tree shall be replaced in the manner provided in subsection (b) hereof in each instance in which a protected tree was removed from land subject to the provisions of section 20-32 without a tree removal permit.

(b) *Standards:* A person who has removed a protected tree and is required to replace such tree pursuant to subsection (a) hereof or as a condition of granting a tree removal permit in accordance with section 20-33, shall replace such tree within one year from the date of removal and in accordance with the following standards:

(1) A replacement tree shall be of the same or similar species or such other species as deemed advisable by the tree warden in accordance with the Tree Manual and shall have the same or equivalent size as measured in DBH inches as that of the protected tree that has been removed.

(2) In the event that a tree of the same or equivalent size as measured in DBH inches cannot be planted, then multiple smaller replacement trees may be planted provided that, wherever practicable, as determined by the tree warden, the total DBH of the replacement trees shall, when added together, equal the total DBH of the protected tree that has been removed. The tree warden may specify that replacement trees be of a minimum caliper when consistent with current accepted practice as stated in the Tree Manual.

(3) A replacement tree shall be required to survive for a minimum of one (1) year from the date it is planted. The person planting the tree shall provide documentation as to the date of planting and file the same with the tree warden within fifteen (15) days of the planting of said replacement tree.

(4) A replacement tree shall be planted on the same lot from which the tree was removed or at a location determined by the tree warden in accordance with the priorities stated in the Tree Manual. (Ord. No. V-275, 12-6-99)

Sec. 20-36. Tree replacement fund.

(a) *Established:* There is hereby established a tree replacement fund which shall be held in a separate identifiable account and administered in accordance with applicable provisions of the General Laws. Any payments into the tree replacement fund required by this article shall be deposited in the tree replacement fund and shall be used in accordance with subsection (c) hereof.

(b) *Payment in lieu of planting replacement tree(s):* In lieu of planting a replacement tree as provided in section 20-35, a person who has been granted a tree removal permit may make a contribution to a tree replacement fund in an amount equal to the cost to replace the tree in accordance with the provisions of section 20-35, which cost shall be determined by the tree warden who shall obtain written estimates from at least two (2) tree companies.

(c) *Maintenance of tree replacement fund:* The tree replacement fund shall be maintained in a separate account in accordance with state law. All sums deposited into such fund shall be used solely for the purpose of buying, planting and maintaining trees in the city. (Ord. No. V-275, 12-6-99)

Sec. 20-37. Enforcement.

(a) *Notice of violation:* Any person who violates any of the provisions of this article shall be notified by the tree warden of the specific violation by certified or registered mail, return receipt requested, or by hand delivery. The notice shall set forth the nature of the violation and a

reasonable time period within which compliance must be had. The tree warden shall send notice of violation of section 20-36, subsection (c), which notice shall include the date by which trees were to be replaced or payment was to be made for purposes of computing the "per day" violation fine, as provided in section 20-38, subsection (c).

(b) *Stop work order.*

(1) Upon notice from the tree warden that work on any protected tree, or lot on which a protected tree is located, is being performed contrary to the provisions of this article, such work shall be immediately stopped. The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or to the person doing the work; and shall state the conditions under which work will be permitted to resume.

(2) The tree warden is also authorized to request the agency which has granted an exterior work permit to order, to the extent permissible by law, that the owner cease any activity pursuant to the exterior work permit that might affect such protected tree while a stop work order is pending.

(3) Any person who shall continue any work in or about the protected tree or lot on which a protected tree is located after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not more than three hundred dollars (\$300.00) for each such violation. Each day during which a violation exists shall constitute a separate offense.

(c) *Injunctive relief.*

(1) Whenever there exists reasonable cause to believe that a person is violating this article or any standards adopted pursuant to this article or any term, condition or provision of an approved tree removal permit, the city may, either before or after the institution of any other action or proceeding authorized by this article, institute a civil action in the name of the city for a mandatory or prohibitory injunction and an order of abatement demanding the defendant to correct the unlawful condition upon or cease the unlawful use of the property.

(2) Upon determination of a court that an alleged violation is occurring, it shall enter such order or judgment as is necessary to abate the violation. The institution of an action for injunctive relief under this subsection shall not relieve any party to such proceedings from any civil penalty prescribed for violation of this article. (Ord. No. V-275, 12-6-99)

Sec. 20-38. Penalties.

(a) *Removal without a permit.* Each instance in which a protected tree is removed without a permit shall constitute a violation of this article which shall be subject to a fine in the amount of three hundred dollars (\$300.00).

(b) *Failure to replace trees or make payment.* Each failure to replace a tree or make a payment into the tree replacement fund shall constitute a separate violation of this article which shall be subject to a fine in the amount of three hundred dollars (\$300.00). Each day such violation continues shall constitute a separate offense.

(c) *City trees.* Nothing herein shall be construed to require the city to make a payment into the tree replacement fund for any tree(s) which it removes. (Ord. No. V-275, 12-6-99)

Sec. 20-39. Severability, effect on other laws.

(a) *Severability*: The provisions of this article are severable. If any section, provision, or portion of this article is determined to be invalid by a court of competent jurisdiction, then the remaining provisions of this article shall continue to be valid.

(b) *Conflict of laws*: This article shall not apply to any public shade tree as that term is defined by the General Laws, Chapter 87 or any amendments thereto. Nothing herein is intended to conflict with the General Laws, Chapter 87 and to the extent that any provision hereof conflicts with said Chapter 87, such provision shall not be valid. Nothing herein is intended to conflict with existing special permit procedures as provided in section 30-24 and to the extent that any provision hereof conflicts with said special permit procedures, such provision shall not be valid. (Ord. No. V-275, 12-6-99)

Chapter 20

OFFENSES AND MISCELLANEOUS PROVISIONS

ARTICLE V. MISCELLANEOUS

Sec. 20-60. Trees, posts, ornaments, etc.; injuring, defacing, destroying.

No person shall injure, deface or destroy any guidepost or guide board, any lamppost, lamp or lantern thereon, or any tree, building, fence, post or other thing set, erected or made for the use or ornament of the city. (Rev. Ords. 1973, § 14-11; Rev. Ords. 1995, § 20-11)

Chapter 26

STREETS AND SIDEWALKS

ARTICLE I. IN GENERAL

Sec. 26-28. Removal of trees, shrubs for street work restricted.

Trees or shrubs may be removed for the purpose of straightening, resurfacing or reconstructing any street, gutter or berm when the straightening, resurfacing or reconstructing does not result in the widening of any street, gutter or berm, if there is first a public hearing held on the matter with notice as provided in G.L. c. 87, § 3, and notice of such hearing is sent to abutters, abutters to abutters, the board of aldermen, and mayor, except as otherwise provided in G.L. c. 87, § 5. (Rev. Ords. 1973, § 19-39(a); Ord. No. 62, 3-3-75)

STATE TREE LAWS

*Primary among state laws that deal with trees is Chapter 87, which has long provided protection for **public shade trees**, that is, trees that line our streets and highways. This law requires a public hearing before public trees can be removed, except in an emergency. The law also forbids damage or injury to trees. [Sec. 1 through 13]*

*Chapter 41, sections 109, 40 and 69G define the role of the **Tree Warden** in the planting and care of trees.*

*Chapter 132, sections 11, 12, 13, 16, 25 and 37 discuss responsibility for, payment of and approach to **control of pests** in trees.*

*Chapter 40, section 15C describes the process required for removal of trees on **scenic roads**, referring to the hearing process specified in Chapter 87.*

*Chapter 167D, section 11 talks about creation of **shade tree accounts** in banks.*

*Chapter 44B, the Community Preservation Act, section 15 prohibits destruction or **damage to trees and shrubs** on land acquired with CPA funds.*

These state laws are shown below:

GENERAL LAWS OF MASSACHUSETTS

PART I.

TITLE XIV.

PUBLIC WAYS AND WORKS

CHAPTER 87. SHADE TREES

Chapter 87: Section 1 Public shade trees; definition

Section 1. All trees within a public way or on the boundaries thereof including trees planted in accordance with the provisions of section 7 shall be public shade trees; and when it appears in any proceeding in which the ownership of or rights in a tree are material to the issue, that, from length of time or otherwise, the boundaries of the highway cannot be made certain by records or monuments, and that for that reason it is doubtful whether the tree is within the highway, it shall be taken to be within the highway and to be public property until the contrary is shown.

Chapter 87: Section 2 Powers of tree wardens

Section 2. The tree warden of a town may appoint and remove deputy tree wardens. He and they shall receive such compensation as the town determines or, in default thereof, as the selectmen allow. He shall have the care and control of all public shade trees, shrubs and growths in the town, except those within a state highway, and those in public parks or open places under the jurisdiction of the park commissioners, and shall have care and control of the latter, if so requested in writing by the park commissioners, and shall enforce all the provisions of law for the preservation of such trees, shrubs and growths. He shall expend all money appropriated for the setting out and maintenance of such trees, shrubs and growths, and no tree shall be planted within a public way without the approval of the tree warden, and in towns until a location therefor has been obtained from the selectmen or road commissioners. He may make regulations for the care and preservation of public shade trees and establish fines and forfeitures of not more than twenty dollars in any one case for violation thereof; which, when posted in one or more public places, and, in towns, when approved by the selectmen, shall have the effect of town by-laws.

Chapter 87: Section 3 Cutting of public shade trees; public hearing; damages to fee owner

Section 3. Except as provided by section five, public shade trees shall not be cut, trimmed or removed, in whole or in part, by any person other than the tree warden or his deputy, even if he be the owner of the fee in the land on which such tree is situated, except upon a permit in writing from said tree warden, nor shall they be cut down or removed by the tree warden or his deputy or other person without a public hearing and said tree warden or his deputy shall cause a notice of the time and place of such hearing thereof, which shall identify the size, type and location of the shade tree or trees to be cut down or removed, to be posted in two or more public places in the town and upon the tree at least seven days before such hearing and published in a newspaper of general circulation in the city or town once in each of two successive weeks, the first publication to be not less than seven days before the day of the hearing or if no such local newspaper exists then in accordance with the provisions of section six of chapter four; provided, however, that when a public hearing must be held under the provisions of this section and under section fifteen C of chapter forty prior to the cutting or removal of a tree, such hearings shall be consolidated into a single public hearing before the tree warden and the planning board, or if there is no planning board, the selectmen of a town or the city council of a city, and notice of such consolidated public hearing shall be given by the tree warden or his deputy as provided herein. Any person injured in his property by the action of the officers in charge of the public shade trees as to the trimming, cutting, removal or retention of any such tree, or as to the amount awarded to him for the same, may recover the damages, if any, which he has sustained, from the town under chapter seventy-nine.

Chapter 87: Section 4 Cutting down or removing public shade trees; approval of selectmen or mayor

Section 4. Tree wardens shall not cut down or remove or grant a permit for the cutting down or removal of a public shade tree if, at or before a public hearing as provided in the preceding section, objection in writing is made by one or more persons, unless such cutting or removal or permit to cut or remove is approved by the selectmen or by the mayor.

Chapter 87: Section 5 Cutting down, trimming or removing bushes and small trees

Section 5. Tree wardens and their deputies, but no other person, may, without a hearing, trim, cut down or remove trees, less than one and one half inches in diameter one foot from the ground, and bushes, standing in public ways; and, if ordered by the mayor, selectmen, road commissioners or highway surveyor, shall trim or cut down trees and bushes, if the same shall be deemed to obstruct, endanger, hinder or incommode persons traveling thereon or to obstruct buildings being moved pursuant to the provisions of section eighteen of chapter eighty-five. Nothing contained in this chapter shall prevent the trimming, cutting or removal of any tree which endangers persons traveling on a highway, or the removal of any tree, if so ordered by the proper officers for the purpose of widening the highway and nothing herein contained shall interfere with the suppression of pests declared to be public nuisances by section eleven of chapter one hundred and thirty-two, including the Dutch elm disease.

Chapter 87: Section 6 Penalty for violation of sections 3, 4 and 5

Section 6. Violations of any provision of the three preceding sections shall be punished by forfeiture of not more than five hundred dollars to the use of the city or town.

Chapter 87: Section 7 Planting of shade trees

Section 7. Cities and towns may appropriate money for the purpose of acquiring and planting shade trees in public ways. The tree warden, or a private organization acting with the written consent of the tree warden, may plant shade trees acquired with public or private funds in a public way, or if he deems it expedient, upon adjoining land at a distance not exceeding 20 feet from the layout of such public way for the purpose of improving, protecting, shading or ornamenting the same; provided, however, that the written consent of the owner of such adjoining land shall first be obtained.

Chapter 87: Section 8 Trees on state highways

Section 8. The department of highways, in this chapter called the department, shall have the care and control of all trees, shrubs and growths within state highways, and may trim, cut or remove such trees, shrubs and growths, or license the trimming, cutting or removal thereof. No such tree, shrub or other growth shall be trimmed, cut or removed by any person other than an agent or employee of the department, even if he be the owner of the fee in the land on which

such tree, shrub or growth is situated, except upon a permit in writing from the department. Any person injured in his property by the action of the department as to the trimming, cutting, removal or retention of any such tree, shrub or other growth, may recover the damages, if any, which he has sustained, from the commonwealth under chapter seventy-nine.

Chapter 87: Section 9 Signs or marks on shade trees

Section 9. Whoever affixes to a tree in a public way or place a notice, sign, advertisement or other thing, whether in writing or otherwise, or cuts, paints or marks such tree, except for the purpose of protecting it or the public and under a written permit from the officer having the charge of such trees in a city or from the tree warden in a town, or from the department in the case of a state highway, shall be punished by a fine of not more than fifty dollars. Tree wardens shall enforce the provisions of this section; but if a tree warden fails to act in the case of a state highway within thirty days after the receipt by him of a complaint in writing from the department, the department may proceed to enforce this section.

Chapter 87: Section 10 Injury to trees on state highways

Section 10. Whoever without authority trims, cuts down or removes a tree, shrub or growth, within a state highway or maliciously injures, defaces or destroys any such tree, shrub or growth shall be punished by imprisonment for not more than six months, or by a fine of not more than five hundred dollars to the use of the commonwealth.

Chapter 87: Section 11 Injury to trees of another person

Section 11. Whoever wilfully, maliciously or wantonly cuts, destroys or injures a tree, shrub or growth which is not his own, standing for any useful purpose, shall be punished by imprisonment for not more than six months or by a fine of not more than five hundred dollars.

Chapter 87: Section 12 Injury to shrubs, trees or fixtures

Section 12. Whoever wantonly injures, defaces or destroys a shrub, plant or tree, or fixture of ornament or utility, in a public way or place or in any public enclosure, or negligently or wilfully suffers an animal driven by or for him or belonging to him to injure, deface or destroy such shrub, plant, tree or fixture, shall be punished by a fine of not more than five hundred dollars, and shall in addition thereto be liable to the town or any person for all damages to its or his interest in said shrub, plant, tree or fixture caused by such act. Whoever by any other means negligently or wilfully injures, defaces or destroys such a shrub, plant, tree or fixture shall likewise be liable to the town or any person for all damages to its or his interest in said shrub, plant, tree or fixture caused by such act.

Chapter 87: Section 13 Powers and duties of tree wardens in cities

Section 13. The powers and duties conferred and imposed upon tree wardens in towns by this chapter shall be exercised and performed in cities by the officers charged with the care of shade trees within the limits of the highway.

GENERAL LAWS OF MASSACHUSETTS

PART PARTIZMV-RP.

ADMINISTRATION OF THE GOVERNMENT

TITLE VII.

CITIES, TOWNS AND DISTRICTS

CHAPTER 41. OFFICERS AND EMPLOYEES OF CITIES, TOWNS AND DISTRICTS

TREE WARDEN

Chapter 41: Section 106 Appointment; term

Section 106. If the town provides by vote or by-law that the tree warden shall be appointed, such appointment shall be made by the board of selectmen. The term of such appointment shall be for three years.

In any city or in a town which exceeds ten thousand inhabitants and which provides by vote, by-law or by ordinance that the tree warden shall be appointed, such appointment shall be made by the mayor, with the approval of the city council or by the board of selectmen. In such city or town, the tree warden shall exercise the duties of tree warden and of insect pest control. Such tree warden shall be qualified by training and experience in the field of arboriculture and licensed with the department of food and agriculture in accordance with the provisions of section

ten of chapter one hundred and thirty-two B. The term of such appointment shall be for three years.

Chapter 41: Section 40 Temporary town officers

Section 40. If the office of town treasurer, town collector of taxes, town accountant or auditor in a town having but one is vacant or if any such officer, because of disability or absence, is unable to perform his duties, the selectmen may in writing signed by them or by a majority of them, which shall be filed in the office of the town clerk, appoint a temporary officer to hold such office and exercise the powers and perform the duties thereof until another is duly elected or appointed and has qualified according to law or the officer who was disabled or absent resumes his duties. Any such temporary officer shall be sworn and give bond for the faithful performance of his duties in accordance with the provisions of law applying to the officer whose place he fills, and if he fails so to do within ten days after his appointment the selectmen shall rescind the appointment and appoint another. If a tree warden, highway surveyor, or road commissioner in a town having but one road commissioner, because of disability or absence, is unable to perform his duties, the selectmen may, in like manner, appoint a temporary officer to hold his office, who shall have like powers and duties until such tree warden, highway surveyor or road commissioner resumes his duties or his successor is elected or appointed, as the case may be. This section shall not apply to cities.

Chapter 41: Section 69G Office of lands and natural resources; establishment; powers and duties; director and assistants

Section 69G. Every city or town may establish an office of lands and natural resources. Said office shall have charge of such lands as may be committed to its care and may perform such maintenance and improvement work on other municipal lands as may be permitted by the board, department, commission or committee in charge thereof. Said office shall exercise the duties of tree warden and superintendent of insect pest control, and upon the establishment of said office and offices of tree warden and superintendent of insect pest control shall be abolished. Said office shall be under the control of a director qualified by training and experience in the field of arboriculture and licensed by the pesticide board in the department of environmental protection. The city manager or the town manager in a city or town having such manager, the mayor in any other city and the selectmen in any other town shall appoint said director for a term of three years. The commissioner of environmental management shall be notified in writing forthwith by the city or town clerk of said appointment and the name and address of said director. The director may appoint such assistants as appropriations permit. He shall have control of all sums appropriated for and to be expended by the office and may apply for and receive such federal, state and county assistance as may be available. Nothing contained in this section shall be construed to affect the powers and duties of a conservation commission established under section eight C of chapter forty.

GENERAL LAWS OF MASSACHUSETTS

PART I.

ADMINISTRATION OF THE GOVERNMENT

TITLE XV.

REGULATION OF TRADE

CHAPTER 132. FORESTRY

Chapter 132: Section 11 Suppression of moths, caterpillars, worms and beetles; rules and regulations; contracts; studies for control of public nuisances; annual recommendations

Section 11. The chief superintendent may, subject to the approval of the commissioner, make rules and regulations governing all operations by cities and towns or persons for the purpose of suppressing gypsy and brown tail moths, tent caterpillars, cankerworms, oriental hag moths, fall webworm, Japanese beetle, saddled prominent, pine looper, and elm leaf beetles, which destroy forest and shade tree foliage, diseases and leaf eating and sucking insects which damage forests and shade trees, the Dutch elm disease and the beetles which spread said disease, woodticks, and poison ivy growing within one hundred feet of any public way, all of which are hereby declared to be public nuisances for the purposes of this chapter.

He may make contracts on behalf of the commonwealth; shall study and promote improved methods of suppressing such public nuisances; may act in co-operation with any person, any subdivision of the commonwealth, any other state, the United States, or any foreign government, and without limiting the generality of the foregoing, shall act in co-operation with federal and state agencies engaged in the study or control of said public nuisances; may conduct investigations and gather and distribute information concerning such public nuisances; may advise, make use of and require the use of all lawful means of suppressing such public nuisances; may lease real estate when he deems it necessary; and with the approval of the authority in charge, may use any real or personal property of the commonwealth. He shall prepare for students or for the public such lectures, exhibits or information relative to such public nuisances as may be required; shall personally and by employees of the bureau of shade tree management and pest control supervise operations undertaken by cities and towns to suppress such nuisances, and the expenditure of funds therefor; and for such purposes may employ such assistants and agents, including expert advisers, as he deems necessary. For the purposes of this section he may expend such sums as may be appropriated or donated therefor but no expenditure shall be made or liability incurred in excess of such appropriations and donations.

He shall annually recommend to the commissioner the financial liability, as described in section fourteen, of each city and town, to be appropriated by said city or town to be expended by the local superintendent for such suppression work within said city or town. No owner or occupant of an estate infested or infected by any of the aforesaid public nuisances shall by reason thereof be civilly or criminally liable except to the extent and in the manner and form set forth in this chapter.

Chapter 132: Section 12 Interference with suppression of public nuisances

Section 12. Whoever wilfully resists or obstructs the chief superintendent, any local superintendent or employee or authorized agent of any of them, while such person is engaged in suppressing any public nuisance referred to in section eleven, or knowingly fails to comply with any rule, regulation or quarantine issued by the chief superintendent and approved in writing by the commissioner, shall be punished by a fine of not more than twenty-five dollars.

Chapter 132: Section 13 Local superintendents of shade tree management and pest control; appointment; notice; assistants

Section 13. The city manager and the town manager in cities and towns having such a manager, otherwise the mayor in cities and the selectmen in towns, shall appoint for a term of three years a local superintendent of shade tree management and pest control, hereinafter called the local superintendent, for the suppression of the public nuisances named in section eleven. Said local superintendent shall be qualified by training and experience to enable him to carry out efficiently the powers and duties of his position, and shall be licensed or certified to apply pesticides in accordance with the rules and regulations of the pesticide board in the department of food and agriculture. The commissioner shall be notified in writing forthwith of the said appointment, and the name and address of said local superintendent. Said local superintendent shall, pursuant to the advice and general direction of the chief superintendent, destroy said public nuisances within his city or town, including wood infected by said Dutch elm disease or infested with the beetles which spread said disease, or likely to become so infested, except on property under the control of the commonwealth. The local superintendent may appoint such assistants as appropriations are made for by a city or town, and may designate the tree warden to assist him.

Chapter 132: Section 16 Partial reimbursement of expenditures for management of public shade trees; applications; limitation of assistance

Section 16. Any city or town, which has a public shade tree inventory, not more than five years old, a public shade tree management plan approved by the state forester, and is in compliance with all requirements of law as well as any rules and regulations of the chief superintendent pertaining thereto, may apply to the bureau of shade tree management and pest control, hereinafter the bureau, for partial reimbursement of total expenditures made during the calendar year for the care, control and management of their public shade trees. Compensable activities include, but are not limited to, the planting, pruning, and removal of public shade trees. Any

expenditures made for suppressing public nuisances as they affect public shade trees are excluded from the above.

Application for financial assistance as provided by the bureau must be received annually by the chief superintendent. Reimbursements shall not exceed fifty per cent of the expenditures made by the city or town and shall be based on a program of evaluation as may be adopted by said chief superintendent, with the approval of the commissioner.

Any city or town which has expended during the calendar year for the suppression of said public nuisances, an amount equal to its financial liability as provided in section fourteen, and has complied with the requirements of law and the rules and regulations of said chief superintendent pertaining thereto, may apply for assistance of the bureau in taking further measures for the control of said public nuisances. The value of such assistance shall not exceed fifty per cent of the expenditures made by the said city or town in excess of its financial liability as provided for in section fourteen.

Chapter 132: Section 25 Suppression of foliage-destroying pests within city and town limits

Section 25. The local superintendent in each city and town having charge of the suppression of the public nuisances referred to in section eleven shall have like jurisdiction over the suppression of all foliage-destroying pests within the limits of his city or town for which special appropriation is made. In the absence or disability of such local superintendent, the city manager or town manager in cities or towns having such a manager, otherwise the mayor or the selectmen, may temporarily depute a person, who shall have the same powers as the local superintendent, to perform such duties.

Chapter 132: Section 37 Duties of local forest wardens

Section 37. Every local forest warden, in addition to his duties prescribed by chapter forty-eight, shall investigate the values of forest lands, the character and extent of woodcutting operations, the prevalence of insect pests injurious to forest growths, and other matters affecting the extent and condition of woodlands in his town, and shall report thereon to the forester at such times and in such form as he requires.

GENERAL LAWS OF MASSACHUSETTS

PART PART12MV-RP.

ADMINISTRATION OF THE GOVERNMENT

TITLE VII.

CITIES, TOWNS AND DISTRICTS

CHAPTER 40. POWERS AND DUTIES OF CITIES AND TOWNS

TAKING, PURCHASE AND ABANDONMENT OF LAND

Chapter 40: Section 15C Scenic road designations; improvements; fines

Section 15C. Upon recommendation or request of the planning board, conservation commission or historical commission of any city or town, such city or town may designate any road in said city or town, other than a numbered route or state highway as a scenic road; provided, however, that a numbered route may be designated by a city or town as a scenic road if its entire length is contained within the boundaries of said city or town, and no part of said route is owned or maintained by the commonwealth.

After a road has been designated as a scenic road any repair, maintenance, reconstruction, or paving work done with respect thereto shall not involve or include the cutting or removal of trees, or the tearing down or destruction of stone walls, or portions thereof, except with the prior written consent of the planning board, or if there is no planning board, the selectmen of a town, or the city council of a city, after a public hearing duly advertised twice in a newspaper of general circulation in the area, as to time, date, place and purpose, the last publication to occur at least seven days prior to such hearing; provided, however, that when a public hearing must be held under the provisions of this section and under section three of chapter eighty-seven prior to the cutting or removal of a tree, such hearings shall be consolidated into a single public hearing before the tree warden and the planning board, or if there is no planning board, the selectmen of a town, or the city council of a city, and notice of such consolidated public hearing shall be given by the tree warden or his deputy as provided in said section three of chapter eighty-seven. Any city or town making said scenic road designation may make an ordinance or by-law establishing that a violation of this paragraph shall be punished by a fine not to exceed three hundred dollars.

Designation of a road as a scenic road shall not affect the eligibility of a city or town to receive construction or reconstruction aid for such road pursuant to the provisions of chapter ninety.

GENERAL LAWS OF MASSACHUSETTS

PART I.

ADMINISTRATION OF THE GOVERNMENT

TITLE XXII.

CORPORATIONS

CHAPTER 167D. DEPOSITS AND ACCOUNTS

Chapter 167D: Section 11 Shade Tree and Cemetery Accounts

Section 11. A bank may receive on deposit to any amount, funds in trust for the purposes of setting out shade trees in streets and parks and improving the same, purchasing land for parks or playgrounds and improving the same, maintaining cemeteries or cemetery lots, or erecting and maintaining drinking fountains in public places, subject to the following provisions:

1. *Payments.* -- The interest on such deposits shall be paid at least annually to such town or cemetery authorities as may be designated by the donors of said funds or by the will of the person bequeathing the same, and shall be expended by such authorities within their respective towns or cemeteries for any or all of said purposes as may be specified by such donors or such will. Such deposits and interest shall be exempt from attachment or levy on execution. No part of the principal of such deposits shall be withdrawn or expended, but nothing in this sentence shall prevent the withdrawal of the principal of or interest on deposits made by a cemetery corporation under section three, and nothing in this sentence shall prevent the withdrawal by the city or town treasurer of cemetery perpetual care funds deposited by a city or town.

2. *Court Order.* -- A judge of probate, after notice and a hearing, may authorize an executor, administrator or trustee holding money or other personal property for any of the purposes mentioned in this section, to deposit such money, or the avails arising from such personal property, in any such bank designated by the judge, to be held by it in the manner and for such purposes and upon the trusts upon which the executor, administrator or trustee held the same; and upon the deposit of such money and its receipt and acceptance by such bank the executor, administrator or trustee shall be discharged from further care and responsibility therefor.

3. *Statement Every Three Years.* -- The deposits held in accordance with this section shall be known as the ""Shade Tree and Cemetery Accounts" and the treasurer of the bank with which they are deposited shall give a receipt therefor to the depositor, and shall send by mail or delivery, in January in each third year after the first deposit, to the mayor of a city or the chairman of the selectmen of a town, a written statement, signed by such treasurer, of the amount of deposits held for any of the purposes aforesaid in the name or for the benefit of such city or town or of any instrumentality thereof. Such statement shall be recorded in the office of the city or town clerk.

4. *Transfer of Deposit.* -- If a bank holding such deposits surrenders its charter or ceases to do business, the supreme judicial court may order said deposits to be transferred and deposited in another such bank, upon the same trusts, and if the laws authorizing such banks are repealed, the court may order such deposits to be transferred and deposited in such banking institutions as it may find proper, to be held upon the trusts aforesaid.

GENERAL LAWS OF MASSACHUSETTS

PART PARTIZMV-RP.

ADMINISTRATION OF THE GOVERNMENT

TITLE VII.

CITIES, TOWNS AND DISTRICTS

CHAPTER 44B. COMMUNITY PRESERVATION

Chapter 44B: Section 15 Tort liability for destruction of real property purchased with funds from chapter

Section 15. (a) A person who, without permission, knowingly carries away or steals, mutilates, destroys, damages, causes to be damaged or cuts any tree, shrub, grass or any other portion of real property purchased by a city or town with funds derived from this chapter shall be liable to the city or town in tort for such actions.

(b) Damages, including punitive damages for willful or wanton violation of this chapter or any rule or regulation issued or adopted hereunder, may be recovered in a civil action brought by the city or town or, upon request of the city or town, by the attorney general. The city or town or, upon request of the city or town, the attorney general, may bring an action for injunctive relief against any person violating this chapter or any rule or regulation issued hereunder. The superior court shall have jurisdiction to enjoin violations, to award damages and to grant such further relief as it may deem appropriate.

(c) Any damages, penalties, costs or interest thereon recovered pursuant to this section shall be deposited into the Community Preservation Fund of the city or town in which the violation occurred.

(i.e. Chapter 87, use Tree Wardens Handbook as reference)