

**Community Forestry Management Plan  
Municipal Information Form**

**The Township of Mt. Holly  
Burlington County**

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**Organization Name:** Mt. Holly Township Environmental Advisory Committee

**Mayor's Signature** \_\_\_\_\_

*I certify that this Community Forestry Management was developed specifically and exclusively for our municipality.*

**Date of Management Plan Submission:** March 2017

**Time period covered in Management Plan:** 2017-2021

Check off the Community Stewardship Incentive Program (CSIP) practices identified in the management plan.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> # 1 Training                       | <input checked="" type="checkbox"/> # 2 Community Forestry Ordinance Establishment |
| <input checked="" type="checkbox"/> # 3 Public Education and Awareness | <input checked="" type="checkbox"/> # 4 Arbor Day                                  |
| <input checked="" type="checkbox"/> # 5 Tree Inventory                 | <input checked="" type="checkbox"/> # 6 Hazard Tree Assessment                     |
| <input checked="" type="checkbox"/> # 7 Storm Damage Assessment        | <input checked="" type="checkbox"/> # 8 Tree Maintenance and Removals              |
| <input checked="" type="checkbox"/> # 9 Insect and Disease Management  | <input checked="" type="checkbox"/> # 10 Wildfire Protection                       |
| <input checked="" type="checkbox"/> # 11 Tree Planting                 | <input checked="" type="checkbox"/> # 12 Tree Recycling                            |
| <input checked="" type="checkbox"/> # 13 Sidewalk Maintenance Program  | <input checked="" type="checkbox"/> # 14 Storm Water Management                    |
| <input type="checkbox"/> # 15 Other                                    |  |

Official Use only

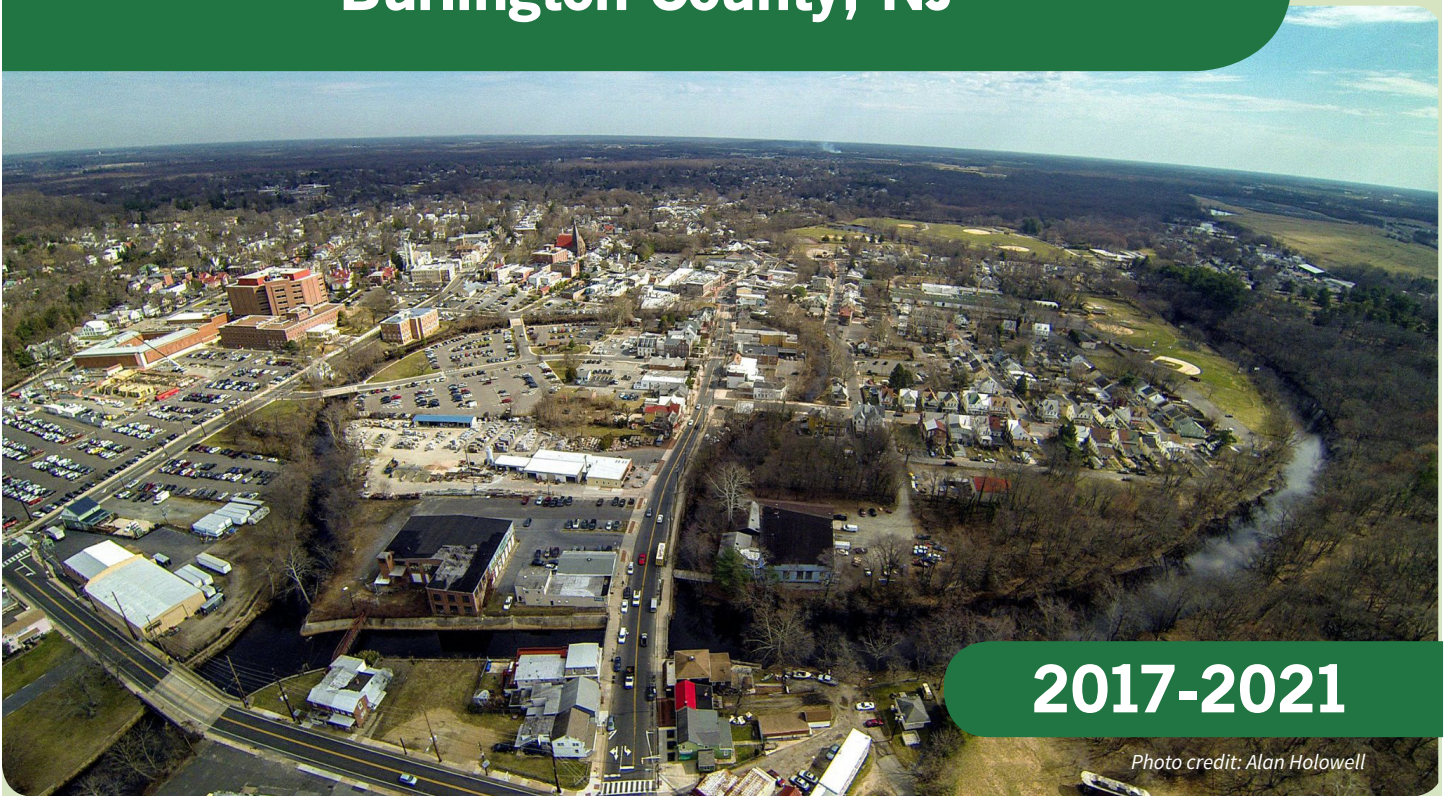
Certification

The above named community has made formal application to the New Jersey Forest Service. I am pleased to advise you that after our review, the NJ Forest Service has concluded that this plan meets standards set forth by the State and the NJ Community Forestry Council and is approved for the period covered.

State Forester \_\_\_\_\_ Approved Date \_\_\_\_\_

# Community Forestry Management Plan

Township of Mt. Holly  
Burlington County, NJ



**2017-2021**

*Photo credit: Alan Holowell*



**Mt. Holly Township Environmental Advisory Committee  
23 Washington Street  
Mt. Holly, NJ 08060**

**The Township of Mt. Holly  
Community Forestry  
Management Plan  
2017-2021**

**March 2017**

**prepared by**

**Mt. Holly Township Environmental Advisory Committee**

**and**

**Kevin L. Scibilia  
New Jersey Certified Tree Expert # 279**

## 2. INTRODUCTION

### A. MISSION STATEMENT

The Mt. Holly Township Environmental Advisory Committee (EAC) mission is to improve the quality of life in Mount Holly Township by maximizing the environmental, social, aesthetic, and economic benefits of trees to the community while minimizing their costs and liabilities.

### B. GOALS AND OBJECTIVES

Since the implementation of the first Community Forestry Management Plan 2012 - 2016, Mt. Holly has made substantial progress on a number of goals but were unable to address some of the eleven stated goals. The number of goals for the upcoming plan will be reduced to a more manageable number so all goals have a better chance of being acted upon.

The Revised Goals and Objectives for 2017-2021 are as follows:

#### ***Goal 1: Form a Tree Advisory Committee or Tree Commission***

**To more fully address the needs of the street tree population and to better manage the resource.**

##### **Objectives:**

- Recruit additional interested persons to serve on the new shade tree committee or to replace Environmental Committee members who move to the shade tree committee.

#### ***Goal 2: Tree Planting***

**To maintain a continuous replanting program to increase overall tree canopy and replace older, diseased and/or hazardous trees.**

##### **Objectives:**

- Utilize data from the tree inventory and the preferred planting list to develop a multi-year tree planting plan based on vacant locations, suitable species for site constraints, tree diversity goals, and available budget.
- Analyze the possibility of obtaining planting stock smaller than the standard 2-2.5" caliper as a means of planting more trees with available funding. Determine the availability and suitability of planting balled and burlapped stock, containerized stock or bare root stock in these smaller sizes.
- Continue to diversify the Township's tree resource in species, longevity and stature to lessen the risk of storm damage, as well as outbreaks from insects and diseases. Diversity in longevity can also buffer costs for future planting and removal.
- Develop a cooperative program among municipal, county, and state entities to plant trees in Burlington County and state rights-of-way within the Township

***Goal 3: Become a Tree City USA***

**This is an attainable goal that is mostly met already but not formally recognized. Designation of Tree City USA will announce to the community the commitment Mt. Holly has for the shared tree resource.**

**Objectives:**

- Visit The National Arbor Day Foundation website to ensure Mt. Holly meets the four “Tree City USA Standards”.
- Continue Arbor Day Celebration and proclamation by the mayor.
- Demonstrate that at least \$2 per capita is being spent per capita per year on tree care, removal and/or planting.
- Assure that the tree ordinance is readily available to the public for reference.
- File online application for Tree City USA status at [www.arborday.org/programs/treecityusa](http://www.arborday.org/programs/treecityusa).

***Goal 4: Tree Maintenance and Care***

**Implement a continuous tree maintenance program for all Township street trees in order to facilitate healthy growth and eliminate hazardous and/or problematic conditions.**

**Objectives:**

- Monitor the condition of the tree population including hazard tree detection through routine visual inspections that cover the entire municipality at least every other year.
- Solicit quotes from tree care companies to act as contractors for hazardous tree removals and trimming.
- Seek out grants and other funding sources to supplement municipal funding of tree maintenance and care.
- Monitor the condition of the tree population during and post construction using the approved Tree Hazard Assessment and Tree and Construction Impacts handout as a guide (Appendix 4).
- Utilize records of homeowner complaints to locate trees for trimming or removal if necessary.
- Improve communication with local public utilities, especially PSE&G, to expedite trimming of shade trees growing into power lines and to strengthen relationships with other tree maintenance partners, such as the Burlington County Highway Department.
- Investigate the possibility of shared municipal services relating to shade tree removal and maintenance.

***Goal 5: Public Education / Awareness / Outreach***

**Promote the new tree ordinance.**

**Objectives:**

- Include link on town website (EAC page) or other suitable outlet discussing the new ordinance.
- Educate Township residents regarding proper tree care on both public and private property.
- Enhance community awareness and promote the availability of tree removal by-products on the Township website.
- Make available to local residents all wood and wood chips generated during tree removals and routine maintenance practices.
- Publicize the Commemorative Tree Program with a view to increasing participation by writing one article on the program annually for local papers.
- Initiate public relations efforts to provide Township residents with information about (Environmental Advisory Committee/Green Team/Shade Tree Committee (EAC/GT/STC) projects and events as well as providing timely information on tree care, tree disease, and pests by submitting press releases to local papers (the Rancocas Valley News) and adding relevant sections to the Township website.
- Provide an annual report of EAC/GT/STC activities to Town Council and the general public.
- Establish, maintain, and/or extend liaisons with groups in and around the Township such as County Greenway Project, Rancocas Creek Watershed Association, Virtua Hospital, etc. by attending meetings and/or reviewing minutes of meetings.
- Improve program administration by maintaining and extending liaisons, either through regular attendance at scheduled meetings, review of minutes, or by other means, with Township Municipal bodies such as the Public Works Department and Planning Board.
- Contribute advice and review to public projects where trees are involved.
- Create a page on the Township website with a list of significant Township Trees.
- Educate students, residents and local businesses through activity programs and community projects about the importance of street and park trees in the Township.

## **C. LIABILITY STATEMENT**

Although street trees are an asset to the community, it is inevitable that they mature and require care, maintenance, and eventually replacement. Care and maintenance, in addition to planting “the right tree in the right place,” can help ensure that community trees not only contribute to the environmental and economic vitality of the area, but also reduce the potential hazards to public safety. Mt. Holly Township must work within a reasonable budget that may not be able to meet each and every need of the community forest immediately. Therefore, it is the intent of this plan to focus available resources to the greatest need and step-by-step work towards a healthy forest with commensurate reduced risks to public safety.

By taking the logical steps outlined in this Community Forestry Management Plan, the Township will garner public support for plan implementation and demonstrate the long-term benefits to the environment and public safety.

Mt. Holly Township wants to become more proactive in the management and care of our trees. Through inventory and hazard assessment, the Mt. Holly Township Environmental Advisory Committee/Green Team/Shade Tree Committee will be positioned to take corrective action prior to structural tree failure and other hazardous tree related conditions. It is acknowledged that not all hazardous conditions can be predicted as it is much like trying to predict which tooth might break next. Good maintenance and care will reduce the probability, but unexpected events may still occur.

Following this Community Forestry Management Plan will demonstrate that Mt. Holly Township is devoting reasonable levels of resources in a planned manner to reduce the number of tree-related accidents and thereby reduce its exposure to liabilities and increase public safety.

## **3. COMMUNITY OVERVIEW**

Mount Holly Township is located in Burlington County, New Jersey. As of the 2000 United States Census, the population was 10,728 with 3,903 households and 2,583 families residing in the township. The population density was 3,750.8 people per square mile. Mount Holly has an area of 2.9 square miles and is the county seat of Burlington County.

Mount Holly was first settled in 1677 by Walter Reeves who acquired the land from local Native Americans by payment. What is now Mount Holly was originally formed as Northampton on November 6, 1688. Northampton was incorporated as one of New Jersey's initial 104 townships by an Act of the New Jersey Legislature on February 21, 1798.

The town essentially began after a dam was built on the Rancocas Creek. This allowed water to flow into a mill race that was built connecting two loops of the meandering creek. The race initially powered a grist mill and saw mill. Edward Gaskill and his sons hand dug the mill race on their property between 1720 and 1723. No mills remain on the raceway that still flows in its original course from the Rancocas Creek just above the dam. The land where the mills once stood is now the Mill Dam Park. After the mills were established, houses and commercial buildings were built on High, Church, White, Mill, and Pine Streets so that by 1800, over 250 dwellings had been built.

Mount Holly Township has placed a high value on maintaining the historical character of the town. This includes the preservation of tree-lined streetscapes. Varieties of trees along the streets' rights-of-way include pin oaks, red oaks, buttonwoods, Norway maples, red maples, locusts, gingkos, and Bradford pears. Most of these trees are mature to advanced in age. The biggest problem with Norway maples is their shallow root systems causing sidewalk and curb damage. Bacterial leaf scorch has recently damaged some oaks and necessitated tree removal to prevent property damage and ensure public safety. The Township maintains a log of the number of trees removed by street and the dates of their removal. The types of trees removed are not specified in the log. The Township also needs to address the placement of incompatible trees at small curbside planting strips and under utility lines which has lead to widespread sidewalk and other infrastructure damage.

The Township operates under a council-manager form of government. The council-manager system of local government combines the strong political leadership of elected officials in the form of a council or other governing body with the strong managerial experience of an appointed local government manager. This establishes a representative system where all power is concentrated in the elected council and where council hires a professionally trained manager to oversee the delivery of public services.

The organization currently charged with tree care is the Environmental Advisory Committee with help from a Green Team (See Community Forestry Program Administration). A shade tree committee is anticipated in the near future and expected to assume responsibility for the tree resource.

Mount Holly Township's Master Plan is out of date and needs to be re-evaluated by the Planning Board. A Form-Based Code Model had been under consideration, but to date it has had no follow up. This Community Forestry Management Plan complements Mount Holly Township's Master Plan objectives by:

- Reinforcing local, county, and state land use planning efforts, specifically as they pertain to trees and their environment.
- Developing standards and sustainable practices for tree planting and maintenance that respect the Township's environmentally sensitive areas, waterways, scenic vistas, historical district, and plant and animal habitats.
- Strengthening the Township's tree population by a planting program that increases species diversity and emphasizes planting trees appropriate for specific locations and conditions.

Mount Holy adopted a tree protection ordinance (Ordinance 2016-21) in 2016 (Attachment 3). The ordinance acknowledges a shade tree committee or its designee as having responsibility for enforcing the provisions. Formation of a shade tree committee is already anticipated within the ordinance.

Mount Holly adopted an Open Space Plan in 2014. The Master Plan notes that Mount Holly Township has a well-developed park system including Iron Works Park, Mill Dam Park, Monroe Street Park, The Mount, Woolman Lake Park, Veterans Park, and Creek Island Park. The Master plan recommends that Mount Holly prepare a detailed Parks and Recreation Plan that would include a survey and inventory of existing facilities and notes as to their condition.

## IMPLEMENTATION OF THE 2012– 2016 COMMUNITY FORESTRY MANAGEMENT PLAN

Since the implementation of the first Community Forestry Management Plan (CFMP) 2012 - 2016, Mt. Holly has made substantial progress on a number of goals but were unable to address some of the stated 11 goals. The number of goals for the upcoming plan will be reduced to a more manageable number so all goals have a better chance of being acted upon.

### Goal One

A tree inventory was completed for Mt. Holly Township. Committee members received training in inventory practices as well as tree identification and hazard tree identification. The tree inventory was completed in 2015 by members of the Environmental Advisory Committee using i-Tree as a data collection platform. Analysis of the collected data is presented in Attachment 1.

There is still work to be done with the inventory. Plans for the current CFMP include training the clerk or Department of Public Works staff to use i-Tree to track requests and to update the inventory as removals new plantings, or maintenance are performed. The analysis of tree species and their percent of the total tree population did not include vacancies. This will have the effect of inflating the percentage of the population of each species. The analysis will be recalculated using vacancies as part of the species calculation. Once this calculation is completed, trees that are still over represented (greater than 5% of the total, will be removed from the preferred planting list for the township.

### Goal Two

Substantial progress has been made on hazard tree identification. Committee members received training in hazard tree identification and noted 175 trees believed to be hazards while performing the inventory. The

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decision was made to have a consultant review the list of hazard trees to rank for priority of removal. The consultant found that the vast majority of the trees identified did have defects but only 42 were in imminent danger of failing. These 42 were recommended for priority removal and the remaining trees categorized as 2, 3, 4, or 5 with higher ranks being less likely to fail in the foreseeable future.

The tendency of the data collectors to overestimate the hazard tree population was less to do with recognizing defects but more with predicting the time for failure. This is understandable since much of this ability comes from observation of many trees with defects and tree failures from defects. As an example, a pin oak may show severe symptoms of bacterial leaf scorch but may persist for five or more years. It is only necessary to remove the tree when the accumulation of large deadwood no longer makes pruning a practical means of removing the hazard. Preemptively removing a tree that will eventually develop a hazard is not necessary nor desirable. Eventually every tree will develop failures. Our job as managers is to predict to the best of our ability when that is likely to happen and to remove or prune those trees that present the most imminent risk.

The recurring process of hazard tree identification will become part of tree maintenance (Goal 4) for the next plan period.

### **Goal Three**

The first objective for Goal 3, developing a list of tree species that are preferred for street side plantings, has been done (Attachment 2). Work is continuing on the remainder of the objectives. The street tree inventory training and execution largely occupied the time of the EAC/GT over the past plan period. With the inventory now complete, attention can shift to tree planting for the upcoming plan.

### **Goal Four**

Goal 4, tree maintenance and care, is an ongoing task that is being addressed. Many of the hazard trees noted in the inventory have already been removed, with more needing attention in the coming years. The objective of improving communication with the utility and the Burlington County Highway department is improving. CSIP funding was secured for inventory training, hazard tree identification and for performing the inventory. In addition, a grant was secured from Sustainable New Jersey to investigate permeable sidewalks and their interaction with tree roots. The final objective of updating the street tree ordinance has been completed and adopted (Attachment 3).

### **Goal Five**

Goal 5, education and training, is progressing. The Environmental Advisory Committee has had training in inventory techniques, hazard tree identification and tree identification as well as maintaining two CORE trained individuals. Intentions are to increase the number of CORE trained individuals in the coming plan period.

The Environmental Advisory Committee believes there is sufficient work and responsibility to justify forming a tree committee to focus specifically on tree related issues. This will be in addition to the Green Team already in existence. This will be a focus on the next CFMP.

### **Goal Six**

The goal of increasing public education has been partially met. Some progress has been made in forming closer relationships with the Burlington County Greenway project and Rancocas Creek Watershed

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Association. However, attending meetings and reviewing meeting minutes are a time-consuming project which further emphasizes the need for a tree committee that can focus more time and attention to such matters. The Arbor Day celebration has not been a priority but will be emphasized in the coming years. We are currently not a Tree City USA and this will become one of our goals for the next plan.

### **Goal Seven**

Tree recycling is realized through composting of leaves and the availability of wood chips. Both are available to residents for use around their homes. Utilization of solid wood (tree trunks) is still not fully realized beyond firewood use. Goal 7 will be incorporated into public outreach in the upcoming plan.

### **Goal Eight**

No formal Tree Care Disaster Plan currently exists for the Township of Mount Holly. At this time, given the small size of the community, Mount Holly will rely on diversification of tree species, age diversification and diversity in tree stature to reduce the risk of disaster from pestilence and storms. Members will not receive specific training nor develop a disaster plan.

### **Goal Nine**

As in many forested communities, the best protection from insects and disease is a diverse population. It is recommended that no one species comprise more than 5% of the total street tree population. Many pests are specific to one or a limited number of species. By having a diverse population, the pest tends to move more slowly because it does not have an endless supply of closely spaced susceptible hosts. The overall damage will be limited to the favored species leaving the remainder of the population in tact. If any one tree species is only 5% of the population, the damage is much more tolerable than the total catastrophe encountered in the Midwest when Dutch elm disease swept through the towns that had lined their streets predominantly with American elms. There are many other examples of pests devastating large homogenous tree populations, such as chestnut blight, emerald ash borer, and southern pine beetle among others.

Typically, there is little money or will to keep pests in check by the application of pesticides to public trees. Rarely is it necessary to apply pesticides to street trees to maintain their health. Given the fact that pesticide application is not likely to occur it is all the more important to guard against pest outbreaks with a diverse population. This is not to say that one street cannot be planted to all the same tree, however, planting multiple streets with the same species so they become a large component (greater than 5%) of the street tree population must be avoided.

Diversity will suppress major pest outbreaks and typically confine losses to a small proportion of the street tree population. No trees are immune from pest attacks.

Diversity also limits damage due to other causes. Bradford pear tends to split when it reaches about 20 years old because of poor branch structure. Ginkgo is fairly resistant to pest attacks but some develop fruit when they become about twenty years of age. The rotting fruit has a very offensive odor. Imagine the problems with half your town planted to ginkgo if half of them began producing fruit!

Finally, not all trees live to be the same age. Smaller stature trees tend to be shorter lived than larger stature trees. A mixture of small stature and large stature trees will stagger the time when they mature and die. Many towns in New Jersey planted large numbers of Norway maples in the middle of the last century. In

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50 years, a large proportion of the trees died off leaving huge gaps in the street tree population and taxing the ability of towns to remove the large number of dead trees. We need to learn from these past mistakes and not allow situations to manifest themselves in the coming decades because of poor planning. We are dealing with a resource that is likely to outlive us. It deserves proper planning.

### **Goal Ten**

The goal of developing a protocol for record keeping has been met largely by making the minutes of the Environmental Advisory Committee/Green Team available online.

### **Goal Eleven**

Mt. Holly Township continues to monitor and evaluate the previous goals and objectives, as part of the process of maintaining approved status.

### **Summary**

Overall, Mt. Holly Township has made substantial progress on the first two goals and partial progress on all but three of the remaining goals (numbers 7, 8, and 9) outlined in the 2012-2016 five year plan. The number of goals needs to be reduced, refocused, and amended for the 2017-2021 CFMP. Mt. Holly would like to reduce the number of goals by incorporating some into others.

Goals 1 (tree inventory) and 2 (hazard tree identification) are largely addressed and only need be to maintained. They will now be incorporated into Tree Maintenance and Care. Goal 5, education of committee and township employees, is part of maintaining approved status and is not necessary to state as a separate goal.

Likewise Goal 11, monitor and evaluate objectives, is automatically completed as each new CFMP is drafted. It too is not necessary to state as a separate goal.

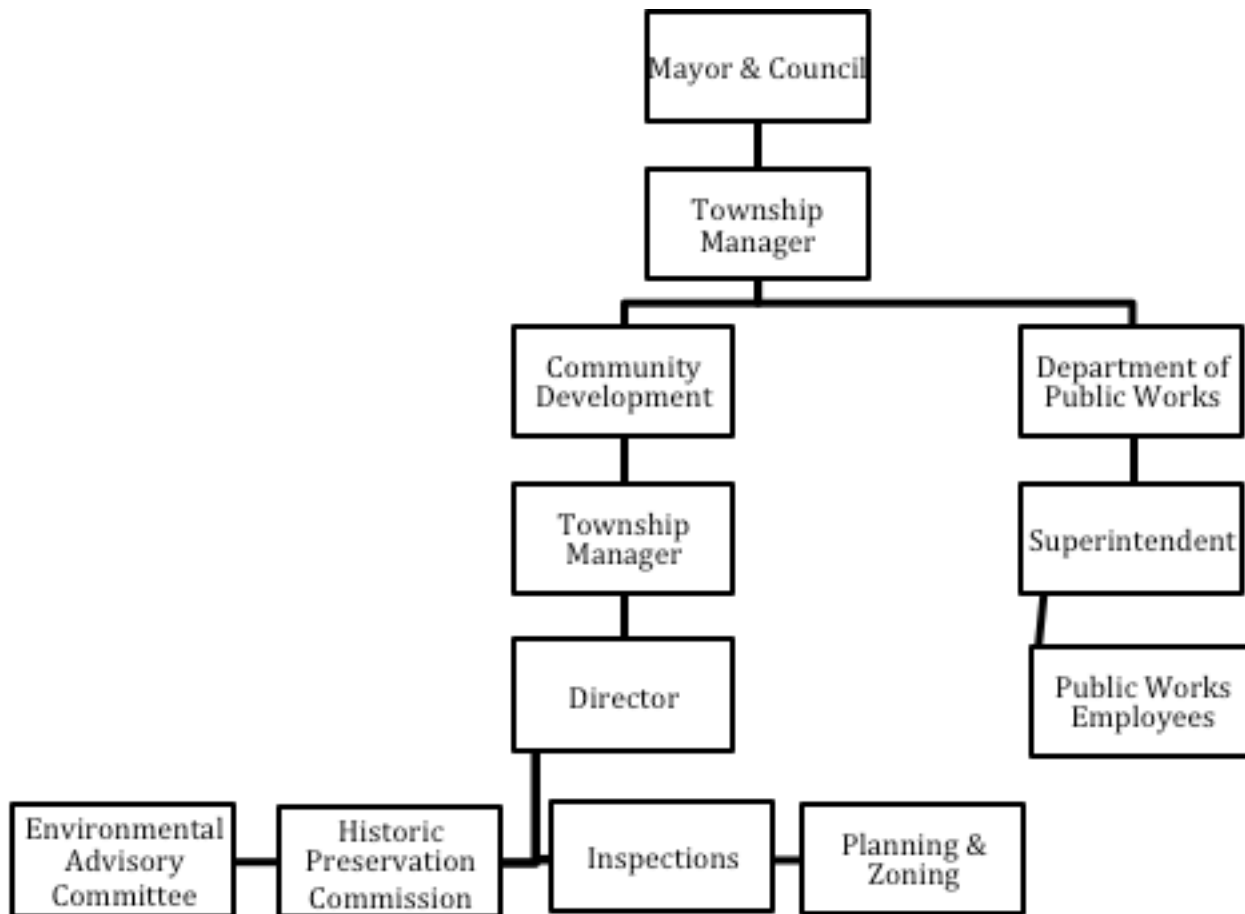
Goal 7, a tree recycling plan for solid wood, will be folded into public outreach. Goals 8 and 9 can largely be met by creating diversity within the street tree population, which can be incorporated into the tree planting goal. By filling vacant planting sites with under-represented species and putting small stature trees under utility lines, and larger stature trees in wide planting strips, with no overhead conductors, the tree population can be further diversified with each round of trees planted. A diverse population in both mature stature, staggered dates of maturity, and species composition, minimizes the effects of many insect and disease outbreaks and the tree disasters they may present. For example, because Mt. Holly has relatively few ash trees, emerald ash borer is not a major concern as it may be in other municipalities. Varying the age and size of trees will also lessen the impact should storms cause damage to the tree population.

Mt. Holly has very little development/forest interface and is at very low risk for wildfire. The presence of extensive agricultural lands, waterways and roadways further diminish the threat of wildfire.

The Mt. Holly Township Public Works Department meets leaf pickup requirement through the Township's NJDEP Tier A Municipal Separate Storm Sewer Permit (MS4). This permit requires all leaves to be picked up on Township streets in order to prevent the accumulation of leaves and the blockage of storm sewer drains. The Township of Mt. Holly is in compliance with the Tier A stormwater requirements.

## 4. COMMUNITY FORESTRY PROGRAM ADMINISTRATION

### ORGANIZATIONAL CHART FOR MT. HOLLY TOWNSHIP



## **Mt. Holly Township Community Forestry Management Plan 2017 - 2021**

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The Community Forestry Management Plan will be administered by the Mt. Holly Environmental Advisory Committee and the Green Team. The Environmental Advisory Committee is composed of five regular members and includes Randi Rothmel, Chair, Johannus Franken, Nick Soldano, Stephen Belton, and Chadd Fry.

The Green Team consists of six members: Randi Rothmel, Mike Rothmel, Nick Sodano, Johanus Franken, Steven Belton, and Chadd Fry. Both groups were created for the protection, development and use of natural resources within the Township and to work on Sustainable Jersey Action Items. A Shade Tree Committee is planned for the near future and is expected to assume the responsibilities described above.

The Mt. Holly Environmental Advisory Committee/ Green Team meets the first Tuesday of each month at 7:30 pm in the Municipal Utilities Authority Building, located at 37 Washington Street, Mt. Holly.

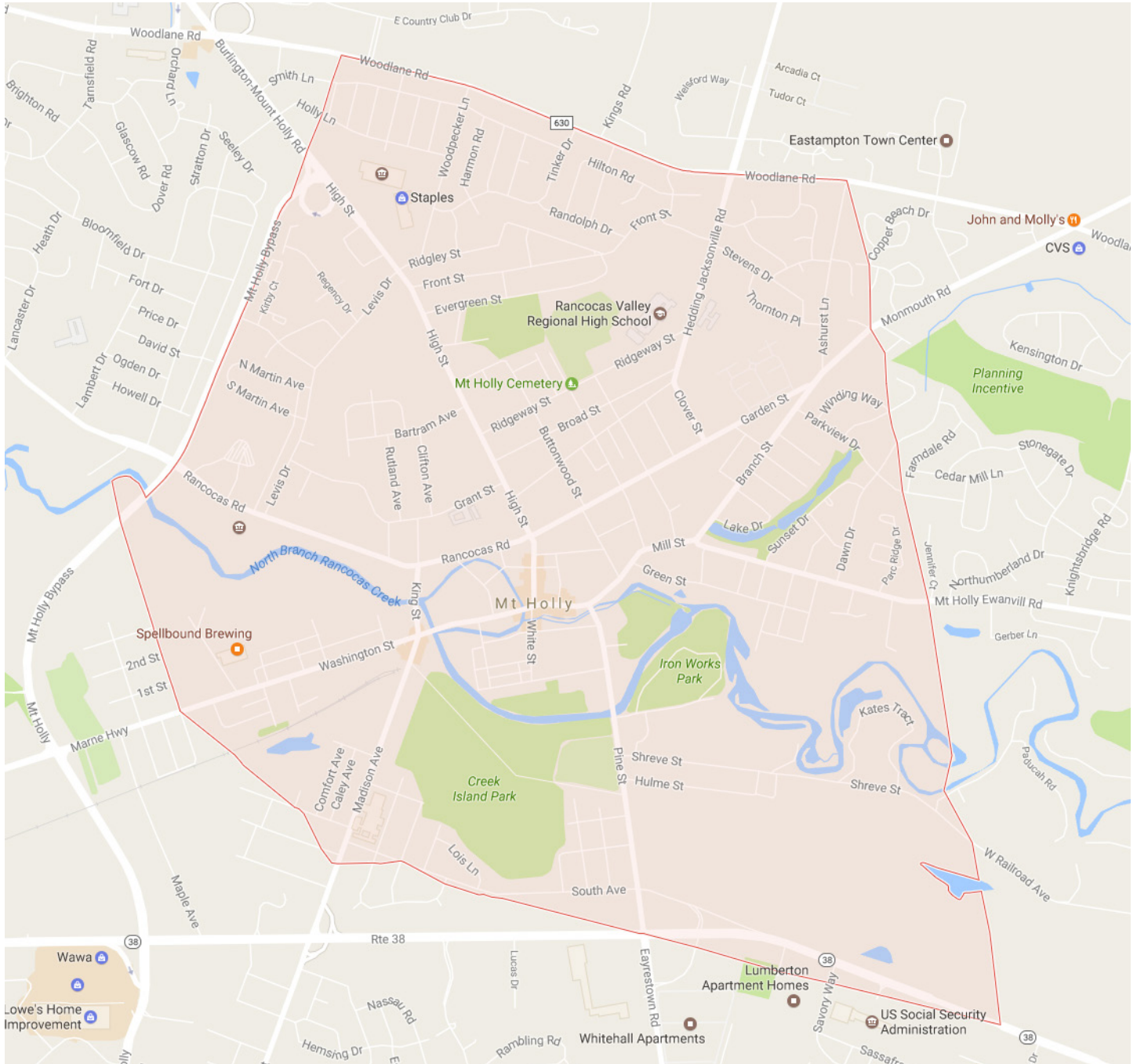
The Department of Public Works primarily deals with the management of tree resources in conjunction with the Township Manager, who is responsible for budget issues, and the Planning Board which is responsible for implementing the Mt. Holly Township Master Plan. When residents have a tree-related complaint, a form is filled out and submitted to Public Works. Complaint forms are available at the Municipal building and an online form is on the Mt. Holly Township website home page at the “request for service” link. Residents may also call the Township Clerk.

If the request is for tree removal, the EAC/GT/STC is notified and provides recommendations to the Department of Public Works (DPW) regarding the tree condition. DPW evaluates the complaints and makes recommendations to Township officials, who then determine if DPW can handle the complaint or if the work must be contracted out. Contractors are used to perform tree removals and pruning. Trees are placed on a removal list and removed in priority of hazard.

Mt. Holly Township has a contract with the Occupational Training Center for leaf and brush removal. Public Works is also involved with leaf, brush and Christmas tree removal.

# 5. COMMUNITY MAP

Mt. Holly Township, Burlington County, NJ



## **6. TRAINING PLAN**

Mt. Holly has two individuals that are CORE trained. They include Randi Rothmel, EAC/GT, and Tim Lawrence, of Mount Holly Department of Public Works. During the initial year of plan implementation, a minimum of two members of the Environmental Advisory Committee/Green Team/Shade Tree Committee will participate in training sessions in order to receive a minimum of eight (8) CEUs. It is also anticipated that additional members and/or public works employees will participate in CORE training sessions in order to increase the Township's knowledge base.

In ensuing years, EAC/GT/STC members plan to attend workshops and conferences and to plan field training with a Certified Tree Expert or arborist. It is anticipated that EAC/GT/STC members and public works employees will complete field courses on tree biology, correcting girdling roots, electrical conductors and their relationship to trees and the use of trees in storm water management. As much as possible, these sessions will be field taught on site to groups of environmental members and DPW in order to acquire a minimum of eight CEUs each year. The Township will apply for CSIP grants to fund training.

No formal Tree Care Disaster Plan currently exists for the Township of Mount Holly. At this time, given the small size of the community, Mount Holly will rely on diversification of tree species, age diversification and diversity in tree stature to reduce the risk of disaster from pestilence and storms. Members will not receive specific training nor develop a disaster plan.

## 7. PUBLIC EDUCATION, AWARENESS AND OUTREACH

The EAC/GT/STC will make a conscious effort to increase awareness and knowledge of trees and their many benefits throughout the community. Committee meeting dates will be listed on the Township's website and local newspaper and be open to resident participation. The EAC/GT/STC will also publish articles in the local community newspaper to keep residents advised of upcoming events and initiatives, including its annual Arbor Day celebration.

Mount Holly has not focused enough attention on Arbor Day in the past few years. Goal 3, becoming a Tree City USA, will require an annual Arbor Day observance and proclamation by the Mayor. A tree planting would be nice but there are other ways of marking the celebration. There are suggestions on hosting an Arbor Day event at [www.arborday.org/celebrate](http://www.arborday.org/celebrate).

Arbor Day is on the last Friday in April. Plans should begin early in the year to reserve room on participants calendar and to publicize the event.

## 8. STATEMENT OF TREE BUDGET (2016)

Item	Expense
<b>Department of Public Works Tree Maintenance Expenses</b>	
Employee wages – tree maintenance & trimming	\$3,439.20
Brush, leaf, and Christmas tree pickup	\$51,383.28
<b>Shade Tree Volunteer Hours</b>	
In-kind services (150 hours at \$22.14) for work on CSIP Grant, meetings, tree complaints, tree protection ordinance and application	\$3,321.00
<b>Tree Removal</b>	
Match from Township for CSIP	\$5,000.00
CSIP grant	\$10,000.00
Training/education: Annual Membership to Shade Tree Federation and conference	\$315.00
<b>Total expenditures from all sources noted</b>	<b>\$73,458.48</b>

## **9. STATEMENT OF PLAN IMPLEMENTATION**

The Mt. Holly Environmental Advisory Committee/Green Team/Shade Tree Committee (EAC/GT/STC) intends to address the five goals of its Community Forestry Management Plan by implementing this plan. Mt. Holly will update its tree inventory; identify and manage hazardous trees within the Township; implement tree planting as grant money becomes available and perform tree maintenance of Township trees on an as needed basis.

In addition to completing the four basic forestry elements cited above, the EAC/GT/STC has included a number of long and short term objectives in its Forestry Management Plan. These are as follows:

1. The EAC/GT/STC will strengthen the township's tree planting program by increasing its species diversity and by making sure that each planting site has the right tree for its conditions.
2. The EAC/GT/STC will pursue an aggressive tree planting program throughout the community to increase total canopy cover and help reduce energy use during summer months.
3. The EAC/GT/STC will identify sources of tree planting stock for the Township.
4. The EAC/GT/STC will continually provide updated forestry training to its members and Township employees.
5. The EAC/GT/STC will continually improve educational programs and public awareness with the local schools, businesses and residents.
6. The EAC/GT/STC will improve its record keeping and make them accessible for use by other Township committees and the public.
7. The EAC/GT/STC will monitor implementation of the five year plan and assess modifications that may be necessary.

The proposed timeline for implementation of Goals and Objectives listed in this plan is as follows:

### **YEAR 1 – 2017**

- Prepare for activities and Arbor Day celebration.
- Formally apply for Tree City USA status.
- Inspect half the township for hazard trees.
- Solicit additional volunteers for shade tree committee (STC).
- Train one additional member in CORE Training to total three (3) CORE-trained members.
- Update tree planting list to delete all *Fraxinus* species (emerald ash borer); *Acer platanoides* (overplanted); and *Acer rubrum* (overplanted).
- Execute/monitor pilot project with pervious sidewalks.
- Improve public outreach and educational activities with local schools, businesses and residents
- Provide forestry training to EAC/GT/STC members and Public Works employees.
- Obtain a minimum of 8 continuing education units (CEUs).
- Apply for available CSIP Grants
- File NJ Shade Tree and Community Forestry and Assistance Act Annual Accomplishment Report

## **YEAR 2 - 2018**

- Prepare for activities and Arbor Day celebration.
- Inspect remaining half the Township for hazard trees
- Develop a source of tree planting stock, (possibly smaller than 2-2.5” caliper)
- Promote passage of new tree ordinance via the Township website or other suitable means.
- Open dialogue with tree maintenance partners, including PSE&G and the Burlington County Highway Department with respect to cooperative work.
- Enhance community awareness and promote the availability of tree removal by-products on the Township website.
- Provide forestry training to EAC/GT/STC members and Public Works employees.
- Obtain a minimum of 8 continuing education units (CEUs).
- Publicize the Commemorative Tree Program with a view to increasing participation by writing one article on the program annually for local papers.
- Update inventory to reflect plantings and removals.
- Apply for available CSIP Grants
- File NJ Shade Tree and Community Forestry and Assistance Act Annual Accomplishment Report.

## **YEAR 3 - 2019**

- Prepare for activities and Arbor Day celebration.
- Inspect half the township for hazard trees.
- Diversify tree species within the community with planting activities .
- Publicize the Commemorative Tree Program with a view to increasing participation by writing one article on the program annually for local papers.
- Train one additional member in CORE Training to total four (4) CORE-trained members.
- Provide forestry training to EAC/GT/STC members and Public Works employees.
- Obtain a minimum of 8 continuing education units (CEUs).
- Apply for available CSIP Grants.
- Update inventory to reflect plantings and removals.
- File NJ Shade Tree and Community Forestry and Assistance Act Annual Accomplishment Report.

## **YEAR 4 – 2020**

- Prepare for activities and Arbor Day celebration.
- Inspect half the township for hazard trees.
- Continue to eliminate hazardous trees in the Township .
- Publicize the Commemorative Tree Program with a view to increasing participation by writing one article on the program annually for local papers.
- Provide forestry training to EAC/GT/STC members and Public Works employees.
- Obtain a minimum of 8 continuing education units (CEUs).

## **Mt. Holly Township Community Forestry Management Plan 2017 - 2021**

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- Apply for available CSIP Grants.
- Update inventory to reflect plantings and removals.
- Apply for Green Community Grant for next five-year CFMP.
- File NJ Shade Tree and Community Forestry and Assistance Act Annual Accomplishment Report.

### **YEAR 5 - 2021**

- Prepare for activities and Arbor Day celebration.
- Inspect half the township for hazard trees.
- Publicize the Commemorative Tree Program with a view to increasing participation by writing one article on the program annually for local papers.
- Obtain a minimum of 8 continuing education units (CEUs).
- Provide forestry training to EAC/GT/STC members and Public Works employees.
- Obtain a minimum of 8 continuing education units (CEUs).
- Apply for available CSIP Grants.
- Update inventory to reflect plantings and removals.
- Draft and submit the third 5-year Forestry Management Plan.
- File NJ Shade Tree and Community Forestry and Assistance Act Annual Accomplishment Report.

# 10. COMMUNITY STEWARDSHIP INCENTIVE PROGRAM

In preparing its Forestry Management Plan, the Environmental Advisory Committee/Green Team/Shade Tree Committee has laid the foundation for enhancing its forest resources. The 2017-2021 CFMP addresses all fourteen CSIP practices.

**1. Training:** Mt. Holly Township will be diligent in training its Publics Works Employees and EAC/GT/STC members. It is our intent to expand training opportunities to municipal employees as well as Committee members in order to broaden the collective skill and knowledge base within the Township. We will take advantage of training programs offered by the NJ Shade Tree Federation and on-site training by NJ Certified Tree Experts.

- Section 6 ..... Page 14
- Section 9.....Pages 17-19

**2. Community Forestry Ordinance Promotion:** The Committee will review and offer updates to existing Township tree ordinances to members of Township Council. This is addressed in Goal 5.

- Goal 5.....Page 4
- Section 3..... Pages 7, 8
- Section 9 (Year 2) .....Page 18
- Attachment 3.....Page 34

**3. Public Education and Awareness:** The Committee will continue an active Public Education and Awareness program that includes community activities and projects as well as publishing articles in the local newspaper. Public Education and Awareness will be expanded with celebration of Arbor Day activities and greater communication with the Land Use Planning Board.

- Goals 3 & 5..... Pages 3, 4
- Section 7.....Page 15
- Section 9..... Pages 17-19

**4. Arbor Day:** The Arbor Day celebration will take on new vigor with the goal of becoming a Tree City USA.

- Goal 3 ..... Page 3
- Section 3 ..... Page 9

**5. Tree Inventory:** The Tree Inventory and Assessment is complete and will be updated annually.

- Section 3 ..... Page 7
- Section 9 ..... Pages 17-19

**6. Hazard Tree Assessment:** The EAC/GT/STC has been trained in hazard tree assessment and a hazard tree inventory is complete.

- Goal 4 ..... Page 3
- Section 3 ..... Page 7
- Section 9..... Pages 17-19

**7. Storm Damage Assessment:** The Township’s tree stock will be continually monitored through resident complaint forms and vigilance by both Public Works employees and EAC/GT/STAC members, as well as biannual hazard inspections.

- Section 9 .....Page 17-19

**8. Tree Maintenance and Removals:**

- Goal 4 ..... Page 3
- Section 3 ..... Page 8
- Section 8 ..... Page 16
- Section 9 ..... Pages 17-19

**9. Insect and Disease Management:** Mt. Holly will address insect and disease management through species diversification.

- Section 3 ..... Page 9, 10

**10. Wildfire Protection:** This is not applicable to Mt. Holly.

- Section 3 ..... Page 10

**11. Tree Planting:** The Township will pursue an aggressive planting program to increase the overall tree canopy of Mt. Holly. In addition the Township has developed a diverse list of trees appropriate for a variety of site conditions.

- Goal 2..... Page 2
- Section 3 ..... Page 8
- Attachment 2..... Page 27

**12. Tree Recycling:**

- Section 3..... Page 10
- Section 9 .....Pages 17-19

**13. Sidewalk Maintenance Program:** Improved placement of small stature trees in narrow planting strips is expected to reduce sidewalk heaving. Mt. Holly is starting a demonstration of permeable sidewalk materials and their impact on tree roots and sidewalk heaving.

- Goal 2..... Page 2
- Section 3 (Goal 4 from 2012-16) ..... Pages 8, 10

**14. Storm Water Management:**

- Section 3 ..... Page 10

# ATTACHMENT ONE



## Street Tree Assessment Report *Mount Holly, NJ*

### Overview

Street trees are a vital community asset that enhance our day-to-day lives and mitigate many of the negative impacts of urbanization. In 2015, a complete street tree inventory was conducted in Mt Holly to assess tree abundance, composition, functional benefits, and monetary value. Public trees residing within the right-of-way along public streets and some park trees were surveyed to determine their species, size, condition, placement and maintenance requirements. Inventory data was collected on smartphones using ArcGIS online mapping program and collector app for ArcGIS. The inventory data were analyzed using i-Tree Streets assessment software developed by the U.S. Forest Service.

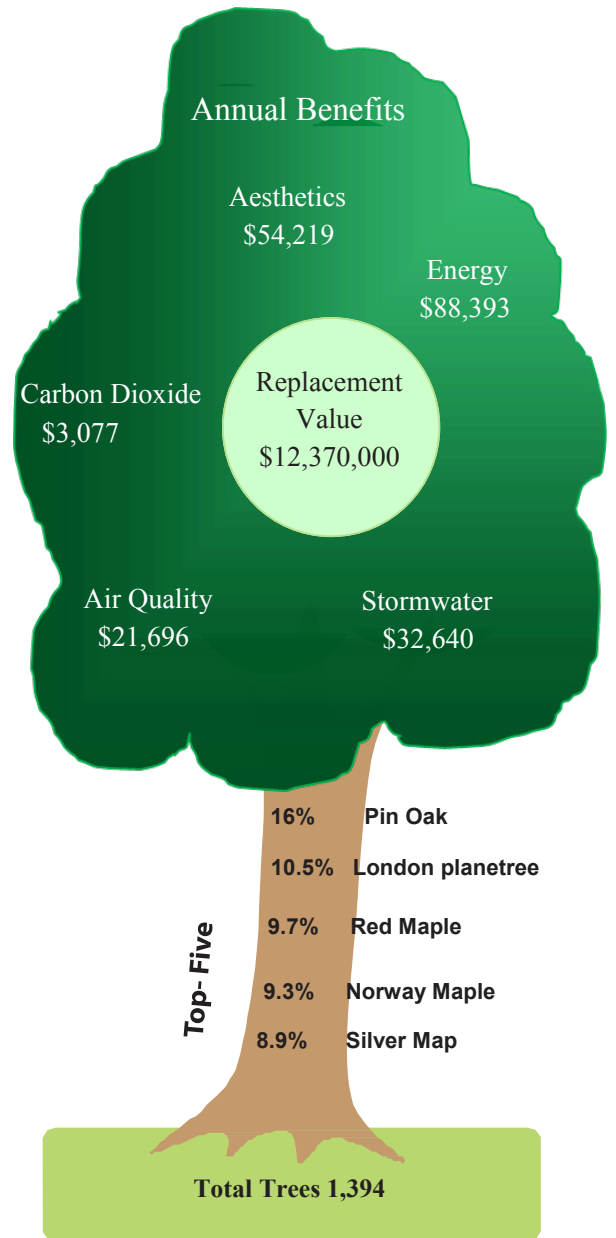
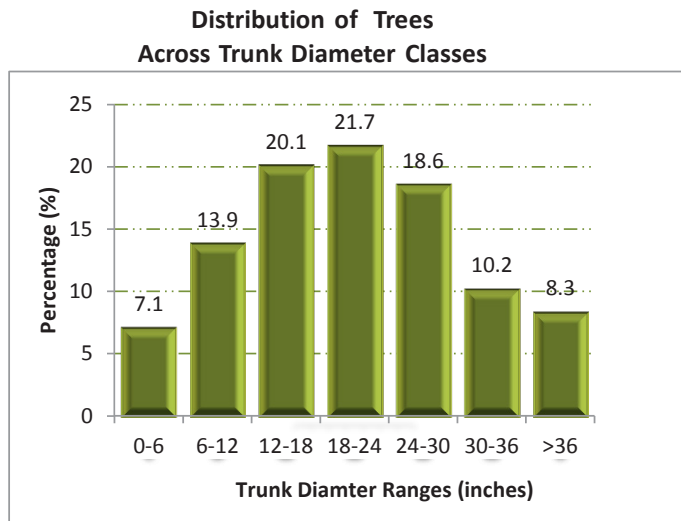
### Key Findings

- Mt Holly has an estimated 1,260 street trees.
- Mt Holly's eight most abundant street tree species are Northern Pin Oak, London Plane, Red Maple, Norway maple, Silver Maple Callery Pear, Sugar Maple and Northern Red Oak.
- Each year, Mt Holly's street trees intercept over 4 million gallons of rainfall and sequester nearly 500 thousand pounds of carbon dioxide.
- In total, Mt Holly's street trees provide about \$200 thousand in benefits annually or roughly \$144 per tree.
- 20% of the street trees were recommended for tree removal due to hazard condition and 16% of the population recommended for pruning.
- The replacement value of Mt Holly's street trees is estimated at about \$12.8 million.

### Street Tree Abundance and Composition

A total of 1394 public trees were inventoried, of which 1260 were street trees. Mt Holly’s public trees provide about 47 acres of canopy, which cover roughly 2.5% of the land area. The eight most abundant species are Northern Pin Oak (16.2%), London Plane (10.5%), Red Maple (9.7%), Norway maple (9.3%), Silver Maple (8.9%) Callery Pear (8.7%), Sugar Maple (6.2%) and Northern Red Oak (5.7%). The most important species (accounting for leaf area and canopy cover in addition to tree count) include Northern Pin Oak (24% leaf area), London Planetree (14.5% leaf area, Red Maple (7.7% leaf area), Norway Maple (4.4% leaf area) and Silver Maple (11.9% leaf area).

Large-stature, broadleaf deciduous trees are the most common tree form amongst Mt Holly’s street trees (1,019 trees). Medium-stature and small-stature, broadleaf deciduous make up a much smaller proportion of the street trees (about 160 each). About 60% of Mt Holly’s street trees are larger than 18 in. trunk diameter while less than 7% are smaller than 6 inches. The majority of Mt Holly’s street trees (~82%) were rated in fair to excellent condition



Relative abundance of Mt Holly's street trees by foliage type and mature height class.

Foliage Type	Large (> 45')	Medium (25 - 45')	Small(<25')	Total	% of Total
Broadleaf Deciduous	1019	160	156	1335	96
Broadleaf Evergreen	37	1	0	38	2.7
Conifer Evergreen	0	5	16	21	1.5
<b>Total</b>	<b>1,056</b>	<b>166</b>	<b>173</b>	<b>1394</b>	<b>100</b>
<b>% of Total</b>	<b>75.8</b>	<b>11.9</b>	<b>12.4</b>	<b>100</b>	

### Street Tree Benefits and Value

Gross annual benefits provided by Mt Holly’s street trees are valued at \$200,026. These benefits come from contributions that street trees make to real estate aesthetics, rainfall interception, energy conservation, air pollution reduction, and CO2 sequestration. Each year, Mt Holly’s street trees intercept roughly 4.0 million gallons of rainfall, conserve a combined 185 megawatt-hour of electricity and 62,500 therms of natural gas for home cooling and heating, and remove about 500 thousand pounds of carbon dioxide from the atmosphere. In addition, Mt Holly’s street trees currently store nearly 14.4 million pounds of carbon, which is valued at over \$47 thousand. Mt Holly’s street trees have a net positive impact on air pollution – removing over 1,561 pounds of pollutants annually – its current mix of tree species emits only 813 pounds of organic volatile organic compounds (BVOCs), while depositing 2,375 pounds of pollution.

On a per-tree basis, the most beneficial tree species are Tree-of-heaven (\$211/year), Tulip Poplar Tree (\$206/year), Japanese Zelkova (\$204/year), Northern Pin Oak (\$199/year) and Hackberry (\$194/year). These values reflect the large size that these trees have

attained, providing abundant leaf area and canopy cover. The average street tree provides about \$144 in gross benefits annually. Gross benefits do not account for annual costs associated with planting, maintenance, or removal, which were not available for this analysis.

The replacement value of Mt Holly’s street trees is estimated at \$12,370,000. This is the value of street trees as a structural asset, and reflects the cost to replant trees in a quantity sufficient to replace their current level of functional benefits. Because a large street tree produces the same amount of benefits as numerous nursery-sized trees, replacing a large tree would require significant resources that may not be feasible due to both spatial and budgetary constraints.

A hazard tree assessment of the street trees identified nearly 20% of the population recommended for removal as either a priority 1, 2 or 3 category. A total of 160 trees were considered a priority 1 or 2 removal. It was recommended that 17% of the population (238 trees) were in need of pruning either as a priority 1 or priority 2 condition.

#### Gross annual benefits provided by Mt Holly's street trees.

Benefit Type	Resource Units	Total \$	Avg. \$/Tree
Aesthetic enhancements	–	54,219	38.98
Rainfall Interception (gallons)	4,065,595	32,640	23.47
Energy Conservation <sup>1</sup>	–	88,393	63.5
Electricity (MWh)	185	25,856	–
Natural Gas (therms)	62,537	62,537	–
Air Pollution reduction (lb) <sup>2</sup>	4057	21,696	15.60
CO <sub>2</sub> sequestration (lb) <sup>3</sup>	496,953	3,077	2.21
<b>Total Benefits</b>	<b>–</b>	<b>200,026</b>	<b>143.80</b>

<sup>1</sup>Sum of electricity and natural gas conservation.

<sup>2</sup>Net pollution reduction (O3, NO2, PM10, and SO2) accounting for pollutant deposition, pollutant avoidance, and BVOC emissions.

<sup>3</sup>Net sequestration accounting for gross tree sequestration, tree decomposition emissions, and tree maintenance machinery emissions.

### Street Tree Opportunities

Mt Holly has a highly valuable street tree population. To sustain this resource and its benefits, the township should continue to focus on planting diverse, functional species and maintaining trees to ensure their health, safety, and appearance. Urban forestry experts generally recommend that a municipal tree population comprise no more than 5% of a single species and 10% of a single genus in order to minimize impacts of pest outbreaks and other species-specific disorders. The top 8 tree species which make up nearly 75% of the street tree population; all exceed the 5% threshold. Planting efforts should temper the use of these species to ensure the diversity and health of Mt Holly's street trees.

One of the most noxious pests threatening New Jersey's street trees is emerald ash borer, an insect introduced from Asia that has killed millions of native ash trees in the United States. Fortunately, native ash species comprise less than 1.8% of Mt Holly's street trees. It is a major concern that there is a significant population of Ash Trees on the Mount – an historic park in the township. However, Mt Holly must remain vigilant in managing street tree diversity because there is ongoing risk of unforeseen introduction of noxious tree pests into the United States.

The size distribution of Mt Holly's street trees suggests an aging structure. Because street trees inevitably grow old and die or must be removed to accommodate land use changes, an ample number of young trees must always exist in order to sustain street tree benefits. The fact that the two of the diameter classes that encompass the smallest

percentage of the total street tree population are the 0-6 and 6-12 inch diameter classes, respectively, indicating that new tree plantings has not been conducted on a routine basis. It is also evident that the right tree has not been planted in the right place. This is evident by the fact that nearly 30% of the street tree population has been planted where there are conflicting wires (high tension lines) and many of these trees are large species trees. Many of these trees are in poor shape as they have had to be dramatically pruned away from the wires. Appropriate planting techniques also need to be employed to limit sidewalk conflicts. Only small trees should be planted in narrow planting strips, keeping large trees only in wide planting strips. Planting efforts should emphasize a highly functional diverse tree species population to ensure that a high level of benefits will be provided by Mt Holly's street trees for the future.

This assessment has reported gross benefits of Mt Holly's street trees, which may not fully reflect the true value of this vital resource. Direct and indirect costs of administering and managing street trees can vary considerably based on species composition, tree size distribution, and other local environmental and economic factors. Therefore, findings of this report should be carefully interpreted in the context of local circumstances that impact tree benefits and costs.

Utilization of the ArcGIS tree inventory mapping program will aid in the management and the stewardship of this very important community asset.

### About This Report

This report was made possible through a CSIP grant from the NJ DEP, Div of Parks and Forestry. Technical assistance was graciously provided by the Kevin Scibilia, CTE –certified tree expert.

Inventory data were analyzed using i-Tree Streets assessment software version 5.1.5. Benefit estimates were based on i-Tree modeling data from the Burlington, New Jersey reference township in the Northeast Climate Zone. The 2014 median home price, used to calculate street tree aesthetic benefits for Mt Holly was \$175,000. Input value for the average cost of energy was as follows: therms \$/therm = \$1.00, gas \$/Kwh- \$0.14

Date of Publication: March 2015.

# ATTACHMENT TWO

## MT. HOLLY TOWNSHIP PREFERRED STREET TREE PLANTINGS

### Planting Strips under wires any width

Common Name	Scientific Name		max height ft	Growth Rate
	Genus	Species		<i>S- slow</i> <i>M-medium</i>
Hedge Maple	Acer	campestre	20-30 ft	S
Karpick Red Maple	Acer	rubrum Karpick	20-30 ft	
Cumulus Shadblow	Amelanchier	cumulus	20-30'	
Robin Hill Shadblow	Amelanchier	grandiflora Robin Hill	20-30'	
Pink Shadblow	Amelanchier	Robin Hill Pink	20-30'	
American Redbud	Cercis	canadensis	20-30'	M
White Flowering Dogwood	Cornus	florida	20-40'	M
Kousa Dogwood	Cornus	kousa	20-30'	M
Cornelian Cherry	Cornus	mas	20-30 ft	M
Washington Hawthorn	Crataegus	cordata	15-35'	M
Lavelle Hawthorn	Crataegus	lavellei	15-35'	M
Crimson Cloud Hawthorn	Crataegus	oxyacantha Superba	15-35'	M
Vaughn Hawthorn	Crataegus	vaughn	15-35'	M
Winter King Hawthorn	Crataegus	viridis Winter King	15-35'	M
Mountain Ash	Sorbus	aucuparia	20-30'	M
Trident Maple	Acer	buergerianum	20-25'	S
Flowering Crabapple species	Malus spp.		variety	
Fringe Tree	Chionanthus	virginicus	<25'	
Ash Snowberry	Sorbus	discolor	<25'	
Accolade Flowering cherry	Prunus	sargentii "Accolade"	<25'	
Golden Chain Tree	Laburnum	anagyroides	<25'	
Jersey Belle Silverbell	Halesia	tetraptera "Jersey Belle"	<25'	

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

### Planting Strip 2.5 - 3.5 ft (30-42 inches) - no wires

<i>Common Name</i>	<i>Scientific Name</i>		<i>max height ft</i>	<i>Growth Rate</i>
	<i>Genus</i>	<i>Species</i>		<i>S- slow M-medium</i>
Hedge Maple	Acer	campestre	20-30 ft	S
Trident Maple	Acer	buergerianum		
Karpick Red Maple	Acer	rubrum Karpick	20-30 ft	
Tartarian Maple	Acer	tartaricum	15-20'	S to M
Shantung Maple or Painted Maple	Acer	truncatum	25-30'	S
Cumulus Shadblow - Serviceberry	Amelanchier	cumulus	20-30'	M
Robin Hill Shadblow- Serviceberry	Amelanchier	grandiflora Robin Hill	20-30'	M
Pink Shadblow- Serviceberry	Amelanchier	Robin Hill Pink	20-30'	M
Tradition® Trazam - Serviceberry	Amelanchier	Trazam	20-30'	M
Paper mulberry	Broussonetia	papyrifera		
American Redbud	Cercis	canadensis	20-30'	M
White Flowering Dogwood	Cornus	florida	20-40'	M
Kousa Dogwood	Cornus	kousa	20-30'	M
Cornelian Cherry (Corneliancherry Dogwood)	Cornus	mas	20-30 ft	M
Dogwood	Cornus	sp "Rutban", Rutcan, Rutdan"		
Washington Hawthorn	Crataegus	cordata	15-35'	M
Lavelle Hawthorn	Crataegus	lavellei	15-35'	M
Crimson Cloud Hawthorn	Crataegus	oxyacantha Superba	15-35'	M
Vaughn Hawthorn	Crataegus	vaughn	15-35'	M
Winter King Hawthorn	Crataegus	viridis Winter King	15-35'	M
Thornless Cockspur Hawthorn	Crataegus	crus-galli var. inermis	20-25'	M
Carolina Silverbell	Halesia	corolina	30-40'	
Jersey Belle Silverbell	Halesia	tetraptera "Jersey Belle"	<25'	
Golden Rain Tree	Koelreuteria	paniculata	25-40'	M to F
Amur Maackia	Maackia	amurensis	20-30'	S
Flowering Crabapple species	Malus spp.		varity of sp	
Persian Parrotia	Parrotia	persica	20-30'	S to M
Accolade Flowering cherry	Prunus	sargentii "Accolade"	<25'	
Mountain Ash Snowberry	Sorbus	discolor	<25'	
Japanese Tree Lilac	Syringa	amurensis japonica	20-30'	
Summer Snow Japanese Tree Lilac	Syringa	reticulata Summer Snow	20-30'	
Summer Sprite® Littleleaf Linden	Tilia	cordata 'Halka'	15-20'	M

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

### Planting Strip 3.5 - 4.5 ft (30-42 inches) - no wires

<i>Common Name</i>	<i>Scientific Name</i>		<i>max height ft</i>	Growth Rate
	<i>Genus</i>	<i>Species</i>		<i>S- slow M-medium</i>
Miyabei Maple	Acer	miyabei	30-40'	M
Briotii Red Horsechestnut	Aesculus	x carnea 'briotii'		
apple serviceberry	Amelanchier	grandiflora Autumn Brilliance	30-40 ft	
Pyramidal European Birch	Betula	alba fastigiata	30-40 ft	
Cutleaf Weeping White Birch	Betula	alba laciniata	30-40 ft	
River Birch	Betula	nigra	30-40 ft	
Asian White Birch	Betula	platyphylla japonica	30-40 ft	
Whitespire Sr. Gray Birch	Betula	populifolia	30-40 ft	M to F
Pyramidal European Hornbeam	Carpinus	betulus fastigiata	30-40 ft	M
American Hornbeam (Ironwood)	Carpinus	caroliniana	30-40 ft	S
Yellowwood	Cladrastis	lutea	30-50'	
Turkish Filbert	Corylus	colurna	45-60'	M
Imperial® Thornless Common Honeylocust	Gleditsia	triacanthos var. inermis	30-35'	F
American Holly	Ilex	opaca	30-40 ft	
Rotundiloba Sweetgum	Liquidambar	styraciflua	35-40	
Amur Maackia	Maackia			
American Hophornbeam	Ostrya	virginiana	30-40'	
Amer Corktree	Phellodendron	amurense	35-45'	
Columbia Londonplane tree	Platanus	x acerifolia 'Columbia'	40'	
Amur Chokecherry	Prunus	maackii	20-35'	M
Columnar Sargent Cherry	Prunus	sargentii dalummaris	20-35'	S
Kwanzan Cherry	Prunus	serrulata Kwanzan	20-35'	M
Autumn Flowering Cherry	Prunus	subhirtella Autumnalis	20-35'	M
Canadian Red Chokberry	Prunus	virginiana	20-30'	F
Korean Mountain Ash	Sorbus	alnifolia	30-40 ft	
Swedish Mountain Ash	Sorbus	intermedia	30-40 ft	M
Oak-Leaf Mountainash	Sorbus x hybrida	hybrida or thuringiaca	30-40 ft	M
Lacebark Elm	Ulmus	parvifolia		

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

### Planting Strip >4.5ft (54 inches) - no wires

<i>Common Name</i>	<i>Scientific Name</i>		<i>max height ft</i>	<i>Growth Rate</i>	
	<i>Genus</i>	<i>Species</i>		<i>S- slow</i>	<i>M-medium</i>
Bonfire Sugar Maple	Acer	saccharum Bonfire	>40		
Goldspire Sugar Maple	Acer	saccharum columnare Goldspire	>40		
Green Mountain Sugar Maple	Acer	saccharum Green Mountain	>40		
Legacy Sugar Maple	Acer	saccharum Legacy	>40		
Greencolumn Black Maple	Acer	nigrum Greencolumn	>40		
Crimsn King Maple	Acer	platanoides Crimson King	>40		
Red Maple (armstrong)	Acer	rubum	35-60'	M	
Sugar Maple	Acer	saccharum	45-75'		
Columnar Sugar Maple	Acer	saccharum columnare	>40		
Sentry Sugar Maple	Acer	saccharum Monumentale	>40		
Ruby Red Horsechesnut	Aesculus	carnea Britolii	>40		
Hackberry	Celtis	occidentalis	>40	M	
Sugar Hackberry	Celtis	laevigata	60-80	M to F	
Katsura Tree	Cercidiphyllum	japonicum	40-60'	M	
Rubber Tree	Eucommia	ulmoides	40-60'	M	
European Beech	Fagus	sylvatica	50-60'		
Fernleaf Beech	Fagus	sylvatica asplenifolia	50-60'		
Pyramidal Beech	Fagus	sylvatica fastigiata	50-60'		
Greenspire Upright American Ash	Fraxinus	americana Greenspire	>40	M	
Newport Ash	Fraxinus	lanceolata Newport	>40	M	
Patmore Ash	Fraxinus	lanceolata Patmore	>40	M	
Lakeview Ginkgo - male only	Ginkgo	biloba Lakeview	50-80'	M	
Magyar Upright Ginkgo- male only	Ginkgo	biloba Magyar	50-80'	M	
Princeton Sentry Ginkgo- male only	Ginkgo	biloba Princeton Sentry	50-80'	M	
Continental Honeylocust	Gleditsia	triacanthos inermis Continental	60-70'	S	
Shademaster Thornless Honeylocust	Gleditsia	triacanthos inermis Shademaster	60-70'	S	
Skyline Honeylocust	Gleditsia	triacanthos inermis Skyline	60-70'	S	
Sunburst Locust	Gleditsia	triacanthos inermis Sunburst	60-70'	S	
Kentucky Coffeetree	Gymnocladus	dioicus	60-75'	M	
Sweet Gum	Liquidambar	styraciflua	>50'		
Tuliptree (fastigate)	Liriodendron	tulipifera fastigiatum	90-120'	M	
Cucumber Tree	Magnolia	acuminata	20-40'		
Dawn Redwood	Metasequoia	glyptostroboides	65-85'	M	
Sourgum /Black Tupelo	Nyssa	sylvatica	60-70'	M	
White Oak	Quercus	alba	40-80'	M	
Northern Red Oak	Quercus	borealis	40-80'	M	
Shingle Oak	Quercus	imbricaria	40-80'	M	
Willow Oak	Quercus	phellos	40-80'	S	
Pyramidal English Oak	Quercus	robur fastigiata	40-80'	S	
Sawtooth Oak	Quercus	acutissima	40-50'	M	
black locust	Robinia	pseudoacaria	40-80'	M	
Regent Scholartree	Sophora	japonica Regent	40-50'		

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

### Planting Strip >4.5ft (54 inches) - no wires

<i>Common Name</i>	<i>Scientific Name</i>		<i>max height ft</i>	<i>Growth Rate</i>
	<i>Genus</i>	<i>Species</i>		<i>S- slow M-medium</i>
Bald Cypress	Taxodium	distichum	60-80'	M
Greenspire Littleleaf Linden	Tilia	cordata Greenspire	50-80'	M
Basswood	Tilia	americana	60-100'	M
Silver Linden	Tilia	tomentosa	50-70'	M
Delaware American Elm	Ulmus	americana Delaware x Species 'Allee', 'Dynasty' 'Valley	>40	M
Elm sp	Ulmus	Forge' 'Princeton'	50-70'	
Green Vase Zelkova	Zelkova	serrata Green vase	50-80'	M
Village Green Zelkova	Zelkova	serrata Village Green	>40	M

### **AVOID LIMITED PLANTINGS**

Pin Oak	Quercus	palustris	40-80'	M
London Planetree	Platanus	x acerifolia 'Bloodgood '	70-100	M

### **DO NOT PLANT**

White Ash	Fraxinus	americana	50-70	M
Green Ash	Fraxinus	pennsylvanica	50-70	M

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

ORNAMENTAL CHARACTERISTICS OF SELECTED DISEASE RESISTANT CRABAPPLES								
Species and/or Cultivar	Zone	Ht	Wd	Form/Habit	Bud	Flower	Fruit	Foliage
'Adams'	4a	20'	20'	round	deep pink	deep pink, profuse	red, persistent, 5/8"	green with red tint
'Adirondack'	4	18'	12'	vase	carmine	white, textured	bright red, 1/2"	dark green, leathery
American Salute™ ('Amsalzam')	4	18'	10'	upright oval	rose-red	rose-red	cherry-red, 3/8"	maroon-red
American Spirit™ ('Amerspirzam')	4	18'	18'	round	white- pink	deep rose	persistent, red, 1/2"	green
American Triumph™ ('Amertrizam')	4	20'	12'	upright columnar	dark-red	dark red, single	dark burgundy- red	reddish-purple
<i>baccata</i> 'Jackii'	3a	20'	20'	round	white- pink	white, fragrant, early	deep red-purple, 3/8"	glossy green
'Cardinal'	4	16'	22'	broad spreading	pink	bright pink to red	deep red, 1/2", often sparse	dark purple-red, glossy
Centurion® ('Centsam')	4	20'	15'	narrow oval	dark red	rose red	bright red, persistent, 5/8"	reddish changing to green
'Dolgo'	3b	30'	25'	oval	white	white	bright red, edible, 1	glossy green
'Donald Wyman'	4	20'	22'	round	pink	white, abundant	bright red, persistent, 3/8"	dark green
'Doubloons'	4	18'	16'	dense oval	carmine	white, double	yellow, persistent, 3/8"	deep green
<i>floribunda</i>	4b	20'	25'	round	carmine	pink-white, large	yellow/red, 3/8"	green, small
'Liset'	4a	15'	15'	columnar	crimson	pink-red, large	dark red, 1/2"	reddish aging to bronze green
'Prairiefire'	4	20'	18'	oval, round with age	crimson	pink-red	orange-red, persistent, 1/2"	reddish aging to red-green
'Professor Sprenger'	4	20'	20'	oval, round with age	pink	white, fragrant	orange-red, persistent, 1/2"	green
'Purple Prince'	4	20'	20'	round	carmine	rose red	maroon, persistent, 3/8"	purple aging to bronze-green
Red Jewel™ ('Jewelcole')	4	15'	12'	oval	pink to white	white	bright red, persistent, 1/2"	green
'Robinson'	4	25'	25'	oval	crimson	deep pink	dark glossy red, 3/8"	reddish aging to bronze green
Royal Raindrops™ ('JFS-KW5')	4	20'	15'	upright spreading	pink	bright pinkish- red	persistent, red, 1/4"	purple, cut-leaf, orange-red in fall
'Sentinel'	4	18'	12'	narrow oval	red	pink to white	bright red, persistent, 1/2"	dark glossy green
'Snowdrift'	4	20'	20'	upright spreading, round,	pink	white, single	persistent orange, less than 3/8"	bright green, glossy
'Strawberry Parfait'	4	18'	22'	vase	red	pink, large	yellow, 3/8"	reddish aging to green
Sugartyme® ('Sutyzam')	4	18'	15'	oval	pink	white, fragrant	red, persistent, 1/2"	green
x <i>zumi</i> 'Calocarpa'	4a	20'	22'	round	deep red	white	bright red, persistent, 3/8"	green

\* This list does not include recent selections that have reportedly shown good disease resistance, yet have not been

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

***Ulmus* x species (Elm Hybrids) Disease Resistance:** all listed cultivars are Dutch elm disease resistant

Cultivar	Elm Yellows	Elm Leaf Beetle
'Discovery'	resistant	resistant
'New Horizon'	unknown	moderately susceptible
'Prospector'	resistant	resistant
'Regal'	unknown	susceptible
'Sapporo Autumn Gold'	unknown	susceptible
'Urban'	resistant	very susceptible
Vanguard™ ('Morton Plainsman')	reportedly resistant	moderately resistant
Accolade™ ('Morton')	reportedly resistant	resistant
Danada Charm™ ('Morton Red Tip')	reportedly resistant	unknown but likely resistant
Commendation™ ('Morton Stalwart')	reportedly resistant	unknown
'Frontier'	tolerant, likely resistant	moderately resistant
'Homestead'	resistant	susceptible
'Patriot'	resistant	resistant
'Pioneer'	resistant	susceptible
Triumph™ ('Morton Glossy')	reportedly resistant	unknown

## ATTACHMENT THREE

### MOUNT HOLLY TREE PROTECTION ORDINANCE ORDINANCE NO. 2016 - 21

**WHEREAS**, the Township of Mount Holly (“Township”) has a wide variety of vegetation and specifically trees within the Township which contribute to the character, maintenance, health and otherwise general well-being of the Township and its citizens; and

**WHEREAS**, the Council for the Township desires to reduce tree loss during development, reduce damage to standing trees during construction, provide for the replacement of lost tree, provide for planting of trees in places where there are not currently many trees and maintain preserved trees within the Township of Mount Holly; and

**WHEREAS**, Council for the Township of Mount Holly understands that indiscriminate, uncontrolled and excessive destruction, removal and clear cutting of trees upon lots and tracts of land results in increased drainage control costs, increased soil erosion and sedimentation, decreased fertility of the soil, degradation of water resources, decreased groundwater recharge, increased buildup of atmospheric carbon and increased dust and decreased property values, all of which negatively affect the character of Mount Holly Township; and

**WHEREAS**, Council for the Township realizes that the removal of trees adversely affects the health, safety and general welfare of our residents, desires to regulate and control indiscriminate and excessive cutting of trees by preserving the maximum possible number of trees in the course of development of a site, ensuring that the health of trees preserved on a site is maintained throughout the development process, protecting larger, older specimens of trees and encouraging innovative design and grading to promote the preservation of existing trees.

**WHEREAS**, the Council for the Township recognizes recognized that there is a strong relationship between the integrity of Mount Holly Township and the region’s water resources, the development on steep slopes, tree removal, soil disturbance, stormwater management and the general use of land resources and the appropriate management of these resources is an important health, safety and general welfare concern.

**WHEREAS**, the Township Land Use and Planning Board has reviewed the Tree Preservation Ordinance and determined it to be in the best interest of the community and a benefit to the health, safety and general welfare of the citizens of Mount Holly.

**NOW THEREFORE BE IT ORDAINED** by the Council of the Township of Mount Holly, in the County of Burlington and State of New Jersey that the following Ordinance is added to the Township Code as follows:

### Tree Preservation and Removal Ordinance

#### **1. PURPOSE**

Mount Holly Township understands that indiscriminate, uncontrolled and excessive destruction, removal and clear cutting of trees upon lots and tracts of land results in increased drainage control costs, increased soil erosion and sedimentation, decreased fertility of the soil, degradation of water resources, decreased groundwater recharge, increased buildup of atmospheric carbon and increased dust and decreased property values, all of which negatively affect the character of Mount Holly Township.

Mount Holly Township realizes that the removal of trees adversely affects the health, safety and general welfare of our residents, desires to regulate and control indiscriminate and excessive cutting of trees by preserving the maximum possible number of trees in the course of development of a site, ensuring that the health of trees preserved on a site is maintained throughout the development process, protecting larger, older specimens of trees and encouraging innovative design and grading to promote the preservation of existing trees.

It is recognized that there is a strong relationship between the integrity of Mount Holly Township and the region's water resources, the development on steep slopes, tree removal, soil disturbance, stormwater management and the general use of land resources. Therefore, the appropriate management of these resources is an important health, safety and general welfare concern.

#### **2. APPLICABILITY**

Except as provided for specifically in this Chapter, it shall be unlawful to cut, substantially altered or otherwise remove any tree from any lands in Mount Holly Township without a Tree Removal Permit. Routine annual pruning to maintain the health of a tree or drastic pruning in response to damage from adverse weather conditions shall not be considered substantially altering the tree.

The Tree Removal Permit application shall be submitted to Mount Holly Township Clerk.

All applications to the Joint Land Use and Planning Board for approval of a major subdivision, minor subdivision or site plan requiring tree removal shall include an application for a tree removal permit. No tree that was planted or preserved as part of any landscape plan or in accordance with any street tree requirements approved in conjunction with a subdivision or site plan shall be removed, unless specifically excepted pursuant to this Chapter.

#### **3. DEFINITIONS**

Caliper - customary measure of tree size for trees to be newly planted. The measurement is taken 6 inches above the ground for trees 4 inches in diameter or less and 12 inches above the ground for trees over 4 inches in diameter.

Clear Cutting - the removal of all standing trees on a lot or a portion of a lot.

## **Mt. Holly Township Community Forestry Management Plan 2017 - 2021**

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Diameter at Breast Height (“DBH”) - diameter of a tree measured four and one-half (4 ½) feet (known as the forestry method) above the ground level on the downhill side for existing trees.

Drip Line - a limiting line established by a series of perpendicular drop points marking the maximum radius of the crown of an existing tree, but not less than six (6) feet from the trunk, whichever is greater; and within which no construction or disturbance shall occur.

Shade Tree Committee (“STC”) – the Public Body charged with managing the natural resources of the Township of Mount Holly to include Trees. The STC or its designee shall review, grant or deny all Tree Removal Permits.

Replacement Tree - a nursery-grown, certified tree, properly balled with dirt, marked with a durable label indicating genus, species and variety, and satisfying the standards established for nursery stock and installation thereof, set forth by the American Association of Nurseryman.

Selective Cutting - the removal of larger trees on an individual basis while leaving trees of lesser size.

Silviculture - the management of any wooded tract of land to insure its continued survival and welfare, whether for commercial or noncommercial purposes, pursuant to a plan approved by the New Jersey Bureau of Forestry.

Thinning - the removal of undesirable, competitive, diseased or damaged trees so as to cultivate and improve the development of remaining trees on the lot.

Tree - any self supporting woody plant which reaches a typical mature height of twelve (12) feet or more at maturity and has a typical DBH of four (4) inches or greater.

Tree Canopy - the top layer or crown of a mature tree.

Tree Expert – the designee of the Share Tree Committee with an expertise in Trees.

Wooded Acres Permitted for Development - means the wooded lands within a lot or tract which are not specifically excluded from development by any federal, state, county or municipal law or ordinance, deed restriction or covenant running with the lands. For purposes of this Chapter, those lands specifically eliminated from consideration as wooded acres permitted for development include, but are not limited to, wetlands as defined by N.J.S.A. 13:9B-1 et seq.

### **4. CRITERIA FOR ISSUANCE OF TREE REMOVAL PERMITS FOR RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND BUSINESS ZONED LOTS**

Upon completion of the STC or Tree Expert’s inspection report and review of any requested recommendations, the STC or its designee shall recommend approval of a permit if:

- A. The area proposed for tree removal is to be occupied by:
  - a. a building or other structure;
  - b. a street or roadway;
  - c. a driveway;

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- d. a parking area;
  - e. a patio;
  - f. a swimming pool;
  - g. a recreation area;
  - h. a power, drainage, sewerage or any other utility line, easement, or right-of-way; or
  - i. where the area of tree removal is 20 feet or less from either side of or around the perimeter of any of the foregoing, whichever is applicable.
- B. In areas proposed for tree removal which are not to be occupied by any of the uses or facilities set forth in this Section:
- a. The tree is dead, diseased, injured, in danger of falling, is too close to existing or proposed structures, interferes with existing utility service, creates unsafe vision of clearance or conflicts with other ordinances or regulations;
  - b. That the continued presence of such tree or trees is likely to cause danger to persons or property upon the property for which removal is sought, or upon adjoining or nearby property to include damage to structural components of buildings and foundations;
  - c. That the area where such tree or trees are located has a cut, depression or fill of land, or the topography of the land is of such a character as to be injurious or dangerous to such tree or trees, or to tree or trees located nearby;
  - d. That the removal of trees is for the purpose of conducting forestry activities, which activities include, but are not limited to, the harvesting of trees in accordance with a forest management plan and the thinning out of a heavily wooded area, with some trees to be removed, and other trees to remain;
  - e. Upon an express finding by the appropriate decisional authority that the proposed tree removal will not result in or cause, increase or aggravate any or all of the following conditions:
    - i. impaired growth or development of remaining trees or shrubs on the property of the applicant or upon adjacent property,
    - ii. soil erosion;
    - iii. sedimentation and dust;
    - iv. drainage or sewerage problems;
    - v. dangerous or hazardous conditions; or
    - vi. depression in the land value of the subject property and properties in the neighboring area.
- C. Additional Factors Considered
- a. The trees removed shall not constitute more than one half acre or shall be no more than 50 percent of the lot size, whichever is less.
  - b. Existing vegetation shall be preserved to the greatest extent feasible.
  - c. Where the location of an existing tree provides no other alternative but to place a structure outside the permitted building setbacks.
  - d. Where the location of an existing tree negatively impacts on an existing septic field.
  - e. Where no other alternative exists for the placement of a building, building addition, structure, septic field, driveway, deck, patio or lawn area for the recreational use by the inhabitants of the building or dwelling, or any other authorized improvements, but in the vicinity of an existing tree.
  - f. Where the location or growth of a tree inhibits the enjoyment of any outdoor pool, patio or deck.
  - g. Where the location, angle or growth of an existing tree makes it a hazard to structures or human life.

The Shade Tree Committee or its designee shall have the power to affix reasonable conditions to the granting of the permit for the removal of trees.

### 5. EXCEPTIONS

The provisions of this chapter shall not apply to the following:

Any tree with a diameter at breast height (DBH) of less than six (6) inches.

Any tree or trees planted and grown for commercial purposes on property used as a commercial nursery, tree farm, garden center, Christmas tree plantations or tree orchards.

Trees on Residential lots so long as no more than trees (2) trees of any size are removed in any twelve month (12) month period.

Trees on Residential lots with a DBH of less than twelve (12) inches DBH.

Any tree which is part of a cemetery as defined by the New Jersey Cemetery Act, N.J.S.A. 45:27-1 et seq, or its successor Acts.

Trees directed to be removed by municipal, county, state or federal authority pursuant to law subject to notification of the Shade Tree Committee or designee.

Any tree growing on or over a public right-of-way or public land subject to approval by the Shade Tree Committee or designee. Tree removal on public land will be subject to tree replacement requirements as specified in this Chapter upon request by Shade Tree Committee or designee.

Pruning or removal of trees within the right-of-way by utility companies for maintenance of utility wires or pipelines and the pruning of trees within sight easements. Removals by utility companies are subject to approval by the Shade Tree Committee or designee and upon request of Shade Tree Committee are required to compensate the Township as per tree replacement provisions as specified in this Chapter

Those projects which have received major subdivision or site plan approval prior to the effective date of this Ordinance and amended major subdivision and site plans.

### 6. PERMIT APPLICATION, ISSUANCE, DURATION FOR RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND BUSINESS ZONED LOTS (EXCLUDING MAJOR AND MINOR SUBDIVISIONS AND SITE PLANS)

A. Applicability:

a. Residential zoned lots requesting the removal of more than two (2) trees greater than twelve (12) inches DBH in a twelve (12) month period shall submit an application for a tree removal permit to the Clerk of the Township of Mount Holly.

b. Commercial, industrial and business zoned lots requesting the removal of a healthy tree greater than (12) inch DBH or more than three (3) trees between a (6) and (12)inch DBH in a two year period shall submit an application for a tree removal permit to the Clerk of the Township of Mount Holly.

c. If, in the opinion of the Township Clerk or the Shade Tree Committee or its designee, the request for tree removal requires the review by the Joint Land Use and Planning Board or would benefit the Township by such a review, the application shall be forwarded to the Joint Land Use and Planning Board within five (5) business days.

B. Application Form - The application form shall be available from the Township Clerk and shall include substantially the following information:

a. Name and address (street and lot and block) of the owner of the premises and status of legal entity (individual, partnership, corporation of this or any other state, etc.);

b. Description of the premises where removal is to take place, including lot and block numbers, and street address as would be commonly known or is stated on a formal deed recorded with the County of Burlington;

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- c. A list of all trees desired to be removed; including
  - i. For commercial, industrial and business zoned lots, All trees to be removed in excess of twelve (12) inches DBH and/or all trees to be removed in excess of six (6) inches DBH and which exceed the three (3) trees over two years limited as provided for in this chapter; and
  - ii. For residential zoned lots, any tree in excess of more than two (2) trees greater than twelve (12) inches DBH in a twelve (12) month period; and
  - iii. Identification of each by size and species, including total number of each species to be removed.
- d. Purpose for tree removal (construction, building addition, street or roadway, driveway, utility easement, recreation area, patio, parking lot, etc.);
- e. Such other information as may be deemed necessary by the Township Clerk, Shade Tree Committee or its designee or Tree Expert or information believed to be necessary by the applicant in order to effectively process the application.
- f. A sketch shall be provided showing the location of the tree(s) to be removed with a DBH of twelve (12) inches or greater.
- C. Issuance
  - a. The Township Clerk shall forward the Tree Removal Permit to the Shade Tree Commission or its designee or the Tree Expert within five (5) business days of receipt.
  - b. Time limits for approval:
    - i. Where the permit application is submitted as a part of an application for major subdivision, minor subdivision or site plan approval, the time for approval shall be governed by the timing requirements applicable to major subdivision, minor subdivision or site plans.
    - ii. Where the application is made in connection with a residential, commercial, business or industrial lot that is not part of a major or minor subdivision or site plan, the Shade Tree Committee or designee shall act on the application within thirty (30) days of its receipt by the Township Clerk or within such additional time as noticed to the applicant prior to expiration of thirty (30) days after receipt of the application.
    - iii. Failure to act within thirty (30) days, or any extension thereof, shall be deemed to be an approval of the application and thereafter, a tree removal permit shall be issued.
      - 1. But that, approval by default with regard to major subdivision, minor subdivision and site plan applications, shall not be deemed to be a waiver of a tree removal permit.
  - c. Review by Planning Board - If, in the opinion of the township clerk or designee, the request for tree removal does not satisfy the above criteria, then the application may be forwarded to the Planning Board for action.

### **7. PERMIT APPLICATION, LANDSCAPE PLAN, REQUIREMENTS, ISSUANCE, DURATION FOR MAJOR AND MINOR SUBDIVISIONS, SITE PLANS AND OTHER REVIEWS BY THE JOINT LAND USE AND PLANNING BOARD**

- A. Each application to the Joint Land Use and Planning Board of Mount Holly Township for approval of a major or minor subdivision or a site plan that requires the removal of trees shall include an application for a tree removal permit.
- B. Application Form - The application form may be obtained from the Township clerk and shall include the following information:
  - a. Name and address (street, lot and block) of the owner of the premises and status of legal entity (individual, partnership, corporation of this or any other state, etc.);
  - b. Description of the premises where removal is to take place, including lot and block numbers, street address as assigned;

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- c. A list of all trees to be removed with a DBH equal to or greater than six (6) inches identified by size and species, including total number of each species to be removed;
  - d. Purpose for tree removal (new construction, street or roadway, driveway, utility easement, recreation areas, parking lot, etc);
  - e. Proof that there are no delinquent property taxes or assessments due on the property for which the application is submitted; and
  - f. Such other information as may be deemed necessary by the Township Clerk, Shade Tree Committee or its designee or Tree Expert or information believed to be necessary by the applicant in order to effectively process the application.
- C. The Application shall include a "Landscape Plan" prepared by a Registered Landscape Architect or Registered Professional Engineer. The landscape plan must be submitted prior to tree removal permit approval. Said Landscape plan shall include:
- a. Location of existing tree canopy within the property boundaries.
  - b. Location of individual trees with a DBH equal to or greater than six (6) inches identified by size and species within the area of development/limit of disturbance.
  - c. Location of individual trees with a DBH equal to or greater than six (6) inches identified by size and species beyond the area of development/limit of disturbance.
  - d. Location of individual existing trees and their drip lines noted for preservation within the area of development/limit of disturbance identified by size and species. Where clusters of trees exist on the site or are contiguous with adjacent sites, fragmentation of the cluster shall be avoided where possible.
  - e. Location of all replacement trees.
  - f. Clear labeling of the area(s) intended for tree/vegetation removal.
  - g. Tree protection material details and limit of disturbance line.
  - h. Location of existing and proposed buildings/structures.
  - i. All bodies of water and wetlands, including water retention and detention areas.
  - j. Location of all existing driveways and parking areas.
- D. Design Requirements
- a. Only those trees necessary to permit the construction of buildings, structures, streets, driveways, infrastructure and other authorized improvements shall be removed. Existing vegetation shall be preserved to the greatest extent feasible.
  - b. No more than sixty (60) percent of the existing tree canopy within the property boundaries shall be removed. The location of the remaining forty (40) percent of the tree canopy to be preserved shall be noted on the landscape plan. Steep slope limits of disturbance shall supersede this section when appropriate.
  - c. No more than ten (10) percent of existing trees with a DBH equal to or greater than twelve (12) inches within the area of development/limit of disturbance shall be removed unless the applicant shall replant trees removed in accordance with Section 7.
  - d. The Shade Tree Committee or its designee shall be requested for recommended areas of tree preservation.
  - e. Landscape standards may be waived by the Joint Land Use and Planning Board when trees and/or shrub masses are preserved and/or relocated on-site that duplicate or essentially duplicate the landscape requirements contained in this section.
  - f. The Joint Land Use and Planning Board shall have the option of requiring a conservation easement to protect any or all trees or tree canopy areas to remain on site.
  - g. Tree protection measures and the limit of disturbance line shown on the landscape plan shall be provided in the field with snow fencing or other durable material and verified by the Shade Tree Committee or their designee prior to soil disturbance.

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- h. Protective barriers shall not be supported by the plants they are protecting, but shall be self-supporting. Barriers shall be a minimum of four (4) feet high and shall last until construction is complete.
- i. Chain link fence may be required for tree protection, as determined by the Shade Tree Committee or its designee, if warranted by site conditions and relative rarity of the plans
- j. Snow fencing used for tree protection shall be firmly secured along the drip line, but shall be no less than six (6) feet from the trunk.
- k. The grade of the land located within the drip line shall not be raised or lowered more than six (6) inches unless compensated by welling or retaining wall methods; and in no event shall welling or retaining wall methods be less than six (6) feet from the trunk of a tree.
- l. No soil stockpiling, storage of building materials, construction equipment or vehicles shall be permitted within the drip line or within six (6) feet of any remaining trees, whichever is greater.
- m. Any clearing within the drip line, or within six (6) feet of the trunk of a remaining tree, whichever is greater, shall be done by hand-operated equipment.
- n. Where a tree that has been noted for preservation is severely damaged and unable to survive, tree replacement shall occur as provided in this Chapter
- E. Issuance: Where the permit application is submitted as a part of an application for major subdivision, minor subdivision or site plan approval, the time for approval shall be governed by the timing requirements applicable to major subdivision, minor subdivision or site plans. Approval by default with regard to major subdivision, minor subdivision and site plan applications, shall not be deemed to be a waiver of a tree removal permit.
- F. Duration of Permits. Permits granted for the removal of trees under the terms and conditions of this ordinance shall run with the land and shall remain in force and effect for the following periods of time, and not thereafter. Once the permit has expired, a new application must be submitted for review and a new permit issued.
  - a. If granted for a lot or parcel of land for which no building permit is required - one year from the date of issuance.
  - b. If granted for a lot or parcel of land for which a building permit is required, but for which no site plan approval is required by the Planning Board, until expiration of the building permit granted with such tree removal permit.
  - c. If granted for a lot or parcel of land for which site plan approval from the Planning Board/ is required as a condition precedent to obtaining a building permit - until expiration of the site plan approval, or expiration of the building permit issued after such site plan approval.
  - d. If granted for a lot or parcel of land for which minor subdivision is sought - one year from the date of granting such minor subdivision.
  - e. If granted for a lot or parcel or land for which preliminary approval of a major subdivision is sought - until expiration of such approval.

### **8. TREE REPLACEMENT AND REFORESTATION**

The replacement of trees (except those removed on residential lots, public land or by public utilities) shall occur as prescribed in the Table 1. Trees removed on residential lots, public land or by utility companies will follow the schedule in Table 2

## Mt. Holly Township Community Forestry Management Plan 2017 - 2021

Table 1 - Tree Replacement Schedule

Tree to be removed	Number of Replacements	Size	Alternative \$ Compensation to Tree Escrow fund
6-12" DBH	1 tree	2-2.5" caliper	\$200
12- 18" DBH	2 trees	2.5-3" caliper	\$440
18- 24" DBH	3 trees	3" caliper	\$720
24-36" DBH	4 trees	3-4" caliper	\$1100
>36" DBH	8 trees	3-4" caliper	\$2200

Table 2 Requested Tree Replacement Schedule for trees removed from Residential Lots, Public Areas and Right of Way by Utilities or Public entities

Tree(s) to be removed	Number of Replacements	Size	Alternative \$ Compensation to Tree Escrow fund
(2) 6-12" DBH	1 tree	2-2.5" caliper	\$100
(1) 12- 16" DBH	1 tree	2.5-3" caliper	\$200
(1) 16- 24" DBH	2 trees	3" caliper	\$400
(1) 24-36" DBH	3 trees	3-4" caliper	\$600
(1) >36" DBH	4 trees	3-4" caliper	\$800

Replacement tree(s) shall be of nursery grade quality, balled and burlapped and located on site. Where replacement trees are required but not suitable for the particular site prescribed due to the size of the site, Mount Holly Township shall deposit the monetary equivalent of each tree into a tree escrow account. Trees deposited into the community tree escrow shall be utilized for planting on public lands or for street trees.

The type of replacement tree(s) shall be the same as the species removed from the site or other acceptable species according to the Township tree planting list.

The planting of all replacement trees shall be done by or supervised by a person with horticultural training in tree care and planting methods.

Newly planted replacement trees shall be monitored for a period of one year to ensure the health of the trees. If the replacement trees die within the one year period, the developer/applicant shall replace the dead tree.

This table shall only apply to residential lot tree replacements where a permit is required.

**9. PROTECTION OF TREES**

Whenever an application for tree removal is granted under the terms and conditions of this ordinance, the following protective measures shall be observed:

No material or temporary soil deposits shall be placed within the drip line of any existing tree to be preserved.

Except while engaged in tree removal, no equipment shall be operated within six feet of any tree protected by this ordinance nor shall such equipment be operated at any time in such a manner as to break, tear, bruise, decorticate or otherwise injure any living or dormant tree. Except while engaged in tree removal, all requirements of Section 6 shall be observed.

**10. INSPECTION**

Prior to taking final action upon any application for tree removal, an inspection of the site shall be made by the Shade Tree Committee or its designee or the Shade Tree Committee or its designee shall report to the Joint Land Use and Planning Board and the Joint Land Use and Planning Board shall determine whether it or its designee shall provide an additional inspection.

The appropriate authority responsible for the inspection as referenced above shall also periodically inspect the site throughout the duration of construction in order to ensure compliance with this ordinance. Such inspection shall be made of the site referred to in the application, and of contiguous and adjoining lands, as well as of lands in the vicinity of the application, for the purpose of determining drainage conditions and physical conditions existing thereon.

**11. NOTICE OF COMMENCEMENT OF TREE REMOVAL**

The holder of a tree removal permit shall notify the Township Clerk in writing at least four (4) business days in advance of when the tree removal activity will commence.

The notice shall also include information as to the manner of disposal of the removed trees.

In the case of the removal of dead or diseased trees, the dead or diseased trees shall not be turned into mulch and applied to the site, but shall be disposed of in a manner so as to not disease other trees on site.

**12. FEES**

A. The applicant, at time of filing the application with the Township Clerk, shall pay the application fee of \$10 for each new or existing lot. An inspection fee of \$25 will be applied to all applications requiring an on-site verification.

B. Tree Escrow Fund: The Tree Escrow Fund shall be established and maintained by the Chief Financial Officer of Mount Holly Township to receive and disburse replacement tree contributions. Appropriations from the Tree Fund shall be authorized by the governing body with consideration of the Shade Tree Committee recommendation in accordance with the municipal tree planting plan.

a. The primary purpose of said fund is to provide for the planting and maintenance of trees and shrubs on public property. The fund will also cover administrative costs to implement the provisions of this chapter, including but not limited to site inspections, processing of permits and supervision of tree replacements. Administrative costs imposed in accordance with this chapter shall not exceed 30% of the fund, as determined on an annual basis.

### **13. PENALTIES**

When regulated trees are removed without a tree removal permit, the affected areas shall be replanted to the satisfaction of the appropriate municipal authority. Any person, firm, partnership, corporation, association or other legal entity violating any of the provisions of this chapter shall, upon conviction of such violation, maybe punished by a fine of up to \$1,000 for each offense. Each illegally removed tree shall be considered a separate violation.

Residential zoned lots shall not be subject to a fine for a first time violation, but shall be required to retroactively apply for a permit and supply the related replacement tree pursuant to this chapter. First time violations shall be considered the first violation of the owner of the property. Any owner with additional properties in the Township of Mt. Holly shall not be subject to this exception.

**TREE REMOVAL PERMIT APPLICATION**

**APPLICANT'S INFORMATION**

**APPLICANT:** \_\_\_\_\_  
 Name (Must be property owner or duly authorized agent) (Date)  
 \_\_\_\_\_  
 (Address)  
 \_\_\_\_\_  
 (Telephone Number) (Cell)

**LOCATION OF PREMISES WHERE WORK IS TO BE PERFORMED**

\_\_\_\_\_ Block # \_\_\_\_\_ Lot # \_\_\_\_\_  
 (Street Location)

**CONTRACTOR:** \_\_\_\_\_  
 (Name)  
 \_\_\_\_\_  
 (Address)  
 \_\_\_\_\_  
 (Phone) (Fax) (Cell)

**CERTIFIED TREE EXPERT:** \_\_\_\_\_ Yes \_\_\_\_\_ No **LICENSE NO.:** \_\_\_\_\_

Total number of trees requested to be removed: \_\_\_\_\_ Dead \_\_\_\_\_ Live = Total \_\_\_\_\_

<b>QTY</b>	<b><u>SPECIES TO BE REMOVED</u></b>	<b><u>SIZE (DIA.)</u></b>	<b><u>CONDITION (LIVE/DEAD/DISEASED)</u></b>	<b><u>REPLACEMENT TREE (NO./ SPECIES/ SIZE)</u></b> Use A1 or B1 chart	<b><u>\$ For Tree Escrow Fund if no Tree Replacement being considered</u></b> Use A2 or B2 chart

Continue on additional pages as needed – refer to ordinance for required tree replacement size.

**Residential and Utility Requirements**

A.1 Tree Replacement or A.2 Tree Escrow Fund

DBH of Trees to be removed	# of Trees being removed	# Tree Replacements (size-caliper)	Total Tree Replacements	DBH of Trees to be removed	# of Trees being removed	\$Escrow fee	Total \$ Escrow Fee
(3) 6"-12"	X	1 (2-2.5")	=	(3) 6"-12"	X	\$100	=
12"-18"	X	2 (2.5-3.0")	=	12"-18"	X	\$200	=
18"-24"	X	2 (3.0")	=	18"-24"	X	\$400	=
24"- 36"	X	3 (3-4")	=	24"- 36"	X	\$600	=
>36"	X	4 (3-4")	=	>36"	X	\$800	=

**Major and Minor Sub Divisions and Commercial/ Industrial lots Requirements**

B.1 Tree Replacement or B.2 Tree Escrow Fund

DBH of Trees to be removed	# of Trees being removed	# Tree Replacements (size-caliper)	Total Tree Replacements	DBH of Trees to be removed	# of Trees being removed	\$Escrow fee	Total \$ Escrow Fee
(3) 6"-12"	X	1 (2-2.5")	=	(3) 6"-12"	X	\$200	=
12"-18"	X	2 (2.5-3.0")	=	12"-18"	X	\$440	=
18"-24"	X	3 (3.0")	=	18"-24"	X	\$720	=
24"- 36"	X	4 (3-4")	=	24"- 36"	X	\$1100	=
>36"	X	8 (3-4")	=	>36"	X	\$2200	=

Describe in detail the work for which this tree permit is requested (removal, replacement, etc.) and the reasons for the work:

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1. Payment of Application Fees:
  - \_\_\_\_\_ \$10.00 per residential lot
  - \_\_\_\_\_ \$25.00 inspection fee
  - \_\_\_\_\_ subdivision or site plan - fee is included in planning board application
  
2. Submit three (3) copies of a Tree Removal/Replacement Plan prepared in accordance with this application packet.

## ATTACHMENT FOUR

### MOUNT HOLLY HAZARD TREE ASSESSMENT GUIDELINES

Hazard tree evaluation is the systematic process of assessing the potential for a tree or one of its parts to fail. The primary objective is to identify potential hazards and provide treatment before the trees fail. However, note that all hazards cannot be identified. Structural weaknesses may not be visible from the ground or may be located internally, enclosed within woody tissue and therefore not observable. Hazards should be rated based on their severity so that treatment can be prioritized. The following list of common structural defects often lead to partial or complete tree failure. This list of defects will help familiarize the Mt Holly Environmental Advisory Committee (EAC), Mt Holly Green Team and Mt Holly Public Works with Hazard Tree Assessment techniques. All township trees will be assessed on a 5-yr rotating schedule so that all trees will be assessed at least once every five year by the Mt Holly EAC members and/or trained volunteers. Any suspected hazards will be brought to the attention of the Mt Holly Public Works Office by submitting a Mt Holly Tree Service Request (see below). The request will then be evaluated by the township and will be further evaluated by trained professionals (contracted arborist) as needed.

**Wood Decay and Tree Defects** – Decay in wood is caused by fungi and bacteria that digest woody tissue. Wounds provide the entrance for decay organisms. Decay is usually more rapid in older, slower growing trees rather than in younger, more vigorously growing trees. Decay is the critical factor in determining the stability of the tree or branch. Trunk decay in excess of 25-33% of cross-section area or tree diameter has variously been identified as a critical threshold for failure. Many factors contribute to failure such a species (wood strength), weight distribution, branch structure, lean and exposure. Signs of decay may include cracks, ribs or bulges in the trunk, nest cavities, bee hives, presence of fungal fruiting bodies, and carpenter ants. Check trunk for decay and assess hazard relative to interacting variables.

**Stem Taper** – Trees should exhibit normal stem taper and the trunks should be free of abnormal growths such as cracks, ribs, bulges, cankers, swelling or other deformities. Trees with normal taper and free of defects distribute stresses evenly along their length. Abnormal growths typically occur in response to wounding, structural defect or internal decay. Cracks and splits are often signs of significant structural weakness and should be critically evaluated. Assess trees for normal taper and deformities.

**Root Crown Inspection** – The interface between the tree trunk and the root system is the root crown. The health of the tree can often be determined through defects found at this juncture. In urban settings, root crown damage commonly occurs as a result of reduced growing substrate volume, physical damage from vehicles, and root cutting during curb and sidewalk replacement. If root crown issues are suspected, carefully excavate around the base of the tree to expose major roots and look for evidence of decay or damage to major structural roots. Look for changes in bark texture at the base of the tree, such as from smooth to rough bark, which can indicate internal decay. Check for a flat or depressed area at ground level which may indicate the presence of a girdling root below. Look for basal wounds, loose or cracked bark, frass or sawdust at the base of the tree, conks or mushrooms and asymmetry. Always inspect the root crown for a variety of potential problems.

**Branch Attachment** – Strong branch attachment is critical to the structural integrity of the tree. Strong branches occur when (1) the branch and trunk are unequal in size; (2) there is vertical and radial space available for branch growth; (3) the branch angle is broad enough to permit the branch bark ridge to form, and, (4) there is no included bark. Branches should be well spaced vertically and radially along the tree trunk and not be crowded. Weakly attached branches occur when there are sharp (acute) branch angles, codominant stems, included bark. Carefully observe branch attachments to assess poorly attached limbs or weak leaders.

**Asymmetric Crowns** – There are trees exhibiting crowns that are asymmetric, having disproportionate percentage of the branched canopy on one side of the tree. This often results from growth toward greater access to sunlight. These trees will develop “reaction wood” in response to the disproportionate stresses placed on the trunk bole. Tree boles will often be arched in the direction of the greater source of light. Reaction wood can tolerate normal stresses but may be incapable of supporting the additional weight of ice or snow loading. Inspect the canopy for symmetry.

**Heavy Lateral Branches** – Trees may develop heavy lateral branches that are disproportionately large as compared to the trunk. These branches may be more prone to breakage from wind or snow loading. Inspect for branch symmetry and tree structure.

**Codominant Stems** – Trees with codominant stems are trees that have two or more stems developing from the same point along the trunk. Codominant stems often have similar diameters and will have very narrow angled branch attachment. These narrow attachments will exhibit “included” bark which further diminishes the strength of attachment between codominant stems. Observe trees for codominant stems and narrow angles of branch attachment.

**Epicormic Sprouts** – Epicormic sprouts are shoots that emerge along the trunk or branch. They often develop as a result of excessive pruning, which allows light to penetrate and stimulate buds to sprout, or in response to branch or trunk dieback. Look for epicormic sprouts and determine if the cause is from excessive pruning or a result of tissue dieback.

**Tree Age** – Larger, older trees tend to fail more often than younger, smaller trees. Larger trees have greater potential due to greater heights (stronger winds), greater weights and stresses and greater likelihood of having developed defects as tissue growth slows. Note that urban trees rarely achieve their normal life spans due to additional environmental stress. Larger trees should be inspected more carefully and more frequently than smaller trees.

**Tree Species** – Certain species of trees are known to be more prone to failure than are other species. This is usually associated with tree growth rate and habit. For instance, Silver maple is known to be “weak wooded” and larger older trees are identified as having a high hazard. Bradford pear trees are also fast growing and weak wooded and scaffold limbs often fail due to poor attachment. Bradford pear is a high hazard tree. Sugar maple is a slower growing tree and usually suffers decline and dieback before a significant failure occurs. Sugar maple may be considered a moderate to low hazard tree. Always consider the tree species when assessing hazard potential.

Storm Events – Most tree failures occur as a result of storm events, including high wind, excessively wet soils, and snow or ice loading. In the New Jersey region, the prevailing and strongest winds usually come from the west or northwest (unless a Nor'easter storm). Open grown trees or those without protection from the west/northwest will be subject to greater stresses. Trees with arched trunks or asymmetric crowns in the east/south east will be prone to greater hazards from high winds. Observe tree setting and consider asymmetry in terms of storm events.

Targets – Most trees that will be evaluated by the Mt Holly EAC/Green Team can be assumed to be located in the vicinity of a target (i.e., pedestrian, vehicle, structure, etc.). However, in some instances targets may not be present, and trees exhibiting cavities or dead wood may be left in place to benefit wildlife. Always consider the potential for “targets” when assessing a hazard. Where there are no targets there are no hazards.

## TREES & CONSTRUCTION IMPACTS

Ninety percent (90%) of a tree's roots occur in the top 2 feet of the soil and most of the feeder roots are in the top 6 inches.

Open grown trees may extend roots two to three times the radius of the canopy, while most forest trees extend roots 1.5 times the radius of the canopy. In general, the roots may be thought to extend a distance equal to the height of the tree.

Trees can typically withstand removal of 30 to 50% of their roots, but stability may be compromised after about 30% is removed. Younger, actively growing trees can withstand damage better than older, established trees. Trees vary in their ability to withstand root damage:

**TOLERANT:** red oak, silver maple, red maple, sycamore, American linden, willow, river birch, sweetgum, honey locust, elm, white pine, black gum, box elder, Eastern red cedar

**INTERMEDIATE:** black cherry, dogwood, Norway maple, ash, black oak, red bud, serviceberry, sugar maple

**SENSITIVE:** beech, hickories, black walnut, white oak, pin oak, tulip poplar, spruces, firs

Cutting the roots of a tree at a line tangent to the drip line will remove somewhat less than 15% of the roots (see figure next page).

Cutting the roots a tree at a line that is half the distance between the tree trunk and the drip line will remove about 30% of the roots (see figure - next page).

A tree will usually have four to eleven major structural support roots (framework roots) that originate at the trunk collar. These begin to branch and taper at from 3 to 15 feet from the base of the tree.

There is no standard, but the minimum distance for cutting roots close to the base of the tree is three times (3X) the diameter of the tree. For example, cut no closer than within 6 feet of a 24 inch DBH (diameter at

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breast height) tree. This should avoid severing major structural support roots. Roots that must be cut should be cut off cleanly with a sharp saw and should not be broken, ripped or shattered. Cleanly cut roots will regenerate new roots from the cut ends. Roots over 3" in diameter should be protected from drying with a plastic bag and rubber band placed over the cut ends. Backfill around cut roots as soon as possible to prevent drying.

### Tree Protection Zones (TPZ)

Tree Protection Zones can be established around trees to protect them during construction. For open grown trees, the drip line is often a suitable point to establish the TPZ. The minimum TPZ can be determined by establishing a circle with a diameter in feet that is equal the diameter in inches at breast height (DBH). For example, a 10" DBH tree would have a TPZ that is 10 feet in diameter with tree in the center.

Fencing should be placed protect the TPZ and all vehicles, materials, stockpiles and construction equipment must be kept out of the TPZ.

Soil consists of approximately 50% pore space, which holds water and air. Soil compaction destroys soil structure, affecting aeration, internal drainage and water holding capacity. Tree roots need oxygen to survive.

90% of the damage from compaction occurs the first time heavy equipment passes over the soil. One time is too much. An inexpensive temporary access road can be constructed using heavyweight geotextile with 4 inch thick layer of wood chips.

Recommendations for trees damaged as a result of construction activities:

- Keep the trees well watered\*
- Lightly fertilize\*\*
- Provide a covering of mulch, depth is adequate
- Prune out large deadwood

*\* Injured trees should be watered the first growing season after damage. Irrigation should be performed if there is a two week period during July or August with no substantial rainfall. Apply 20 gallons of water per inch of tree diameter.*

*\*\* - Apply 2 lbs of slow release nitrogen per 1000 sq ft. of canopy. Fertilize in late summer or early fall.*

It may take several years for the results of construction damage to become apparent. Symptoms of damage may appear as:

- Reduced canopy density
- Reduced leaf size
- Branch/twig die back
- Premature development of fall color or early leaf drop

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This plan sketch of a tree outlines the drip line, and the circle indicates the extent of most of the roots. Lowering the soil grade back to the drip line on one side would cut off less than 15 percent of the roots; lowering the grade halfway from the drip line to the trunk on one side would eliminate about 30 percent of the shallow roots.

