

May 17, 2016

Pennington Borough
Community
Forestry
Management Plan
2016 through 2021

Prepared by Gabriel Rosko, Chair - Pennington Borough Shade Tree
Committee, NJ CTE #548, ISA Certified Arborist NJ-0963A, TRAQ

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Municipal/County Information Form

Municipality	Borough of Pennington
County	Mercer County
Address	30 North Main Street Pennington NJ
Contact Name and Title	Gabriel Rosko, Chairperson PSTC
Phone #	609-730-8367
Fax # and E-mail	gabrielrosko@comcast.net
Organization Name	Borough of Pennington
Mayor/County Freeholder's Signature	_____
Date of Management Plan Submission	
Time Period Covered in Management Plan	2016-2021

Community Stewardship Incentive Program (CSIP) Practices Identified in Management Plan:

- ☐ CSIP #1 Training
- ☐ CSIP #2 Community Forestry Ordinance Establishment
- ☐ CSIP #3 Public Education and Awareness
- ☐ CSIP #4 Arbor Day
- ☐ CSIP #5 Tree Inventory
- ☐ CSIP #6 Tree Risk Assessment
- ☐ CSIP #7 Storm Damage Assessment
- ☐ CSIP #8 Tree Maintenance and Removals
- ☐ CSIP #9 Insect and Disease Management
- ☐ CSIP #11 Tree Planting
- ☐ CSIP #13 Sidewalk Maintenance Program
- ☐ CSIP #15 Other

Official Use Only Certification

The above named municipality/county 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 the standards set forth by the State and the NJ Community Forestry Council and is approved for the period covered.

Signed _____

II. Introduction

This is the beginning of Pennington Borough's 4th Community Forestry Management Plan for the years 2016 thru 2021 (5 years). Much has been accomplished during the past 5 years which will be reported on in Section III later in this plan. The purpose and mission for Pennington's tree resources remain unchanged as have most of the goals. The biggest and most significant changes occur in the objectives. Objectives are the specific measurable tasks to be undertaken during the 5-year period.

This plan will identify the course of action for the next 5 years and will require extensive guidance from the Pennington Shade Tree Committee, support from the Mayor and Council, and, most importantly, participation and inclusion of borough residents. Approval of this plan by the State forester, upon favorable recommendation from the Community Forestry Council, will provide continued additional liability protection to the Borough by the New Jersey Shade Tree and Community Forestry Act and will continue to make the borough eligible to receive grant money from the New Jersey Forest Service to assist in the implementation of this plan.

Mission Statement:

To ensure the viability and sustainability of Pennington's forests and shade trees for the economic, aesthetic and environmental benefits provided to Borough residents.

Goals and Objectives:

Pennington has a long history of caring for its trees and has an active shade tree program. The Borough of Pennington Shade Tree Committee (PSTC), author of this plan, has developed the following goals and objectives for 2016 through 2021.

Goal 1.

Sustain the health and vigor of Pennington's trees in order to preserve the intrinsic local character.

Objectives of Goal 1:

- To maintain 80-90% tree canopy in the Borough.
- To identify insect or disease problems and initiate corrective action.
- To identify historic or specimen trees for special care and protection.
- To influence and control tree maintenance by utility companies and others.
- To diversify species and age class distribution of the Borough's trees.
- To continue aggressive monitoring for BLS, checking all pin oaks in late summer.
- To ensure diversity in new plantings

Goal 2.

Provide a continuous public education and tree awareness program in the Borough.

Objectives of Goal 2:

- To continue the Memorial Tree program.

- To provide information to homeowners on Borough web site concerning proper tree care including BLS, planting, pruning, mulching, watering, fertilization, insects and diseases, sidewalk conflict with roots, and song bird habitat creation.
- To provide at least 2 articles per year to local media outlets, such as Hopewell Valley News and MercerMe.
- To coordinate and cooperate with the Pennington Parks and Recreation Commission.
- To conduct an annual Arbor Day Program and tree planting at Pennington's public elementary school in connection with the Borough's Tree City USA activities.
- To provide opportunities for students to actively participate in the stewardship and awareness of Pennington's trees through a big tree search, tree planting or help with street tree data collection.
- To participate in Pennington Day street fair and community event by manning a booth to distribute information about the care and maintenance of trees, aided by a Tree Ring Competition and handouts of tree seedlings.
- To continue to meet the requirements for designation as a Tree City USA, sponsored by the Arbor Day Foundation in cooperation with the NJ Community Forestry Program.

Goal 3.

Maintain public safety by reducing hazardous trees and conflicts.

Objectives of Goal 3:

- To continue the program of detection and remediation of hazardous trees.
- To maintain tree trimming of the lower limbs of street trees for pedestrian safety.
- To inspect trees for hazardous conditions after storm events, and remediate as necessary
- To identify tree/sidewalk conflicts and to pursue corrective action by the homeowner or municipality.
- To ensure that hazardous trees identified by borough residents, STC members or municipal employees are documented, evaluated and ranked for corrective action.
- To create a tree risk assessment and corrective action plan for the Borough.

Goal 4.

Maintain a computer database to help manage the Borough's trees.

Objectives of Goal 4:

- To use appropriate computer programs to record and display accumulated tree data.
- To utilize data to profile the Borough's trees.
- To utilize the data to produce a plan for maintenance, replacement, and planting of the Borough's trees.
- To utilize the data to diversify the species of the Borough's trees.
- To monitor trends in insect and disease problems.
- To use the inventory data to support grant applications.

- To continue to keep inventory up-to-date by entering new trees planted, trees removed and trees pruned.
- To develop a tree data report form for use in keeping the database up-to-date.

Goal 5.

Zero net loss of existing tree canopy.

Objectives of Goal 5:

- To plant a tree for every tree lost.
- To establish an annual objective for tree planting based on inventory data. {A suggested method is to divide the existing planting spots by 10, adjusting annually to recognize newly identified sites, and tree removals.}
- To focus on increasing diversity of planting stock.
- To continue to publicize the existing Memorial Tree Program.

Goal 6.

Support training for Pennington Shade Tree Committee members and Borough employees.

Objectives of Goal 6:

- To attend annual Federation of Shade Tree Commissions meetings.
- To maintain membership in the NJ Federation of Shade Tree Commissions.
- To maintain core training and continuing education requirements of the Community Forestry Assistance Act.
- To increase the knowledge and capabilities of Borough employees in tree care by attending at least one training session sponsored by Rutgers, the NJ Forest Service, or Federation on an annual basis.

Goal 7.

Establish a Borough tree nursery.

Objectives of Goal 7:

- To identify requirements such as size, access and utilities for tree nursery
- To continue to search for an appropriate location for a tree nursery.
- To seek state or other funding to start-up and maintain the nursery.

Liability Statement:

Trees in Pennington provide a desirable aesthetic addition to the landscape. Properly maintained, they add to the economic and environmental vitality of the Borough. Safe trees require constant vigilance and care. Even where excellent long-term planting of the right trees in the right place and good maintenance prevail, it is inevitable that trees mature and eventually need replacement.

Pennington Borough has a proven record of good maintenance and vigilance provided by a continuous survey of hazardous conditions and is committed to continuing its proactive programs to ensure public safety. Pennington's Shade Tree programs, while comprehensive and effective are still constrained by a fixed budget that limits the amount of proactive and restorative work accomplished. It is the intent of this plan to focus available resources on the greatest needs and continue to emphasize healthy trees with the commensurate reduced risks to public safety.

The Pennington Borough Shade Tree Committee feels that by continuing existing programs and initiating the additional actions identified in this plan it will elevate public support for plan implementation and effectiveness. The actions taken as a result of this plan will also continue to demonstrate that well cared for tree resources are beneficial to the environment and public safety.

It is acknowledged that even with a vigilant proactive shade tree program not all hazardous conditions can be predicted. However, existing programs of good maintenance and care reduce the possibility of failure. Through implementation of this plan and continuance of the existing high quality programs, the Pennington Borough Shade Tree Committee will demonstrate its devotion to expending reasonable levels of resources in a prudent manner to reduce the number of tree related accidents. Pennington will, thereby, reduce its exposure to liabilities and increase public safety.

III. Community Overview

The community overview portion of this section remains, for the most part, unchanged from both the 2006-2010 and 2011-2015 plans and is included for its historic and continuity value.

Pennington, which had the honor of being named the Best Town for Families by New Jersey Family Magazine in 2015, is located in the central part of New Jersey in Mercer County. Pennington emerged as a small crossroads community in the 1720s, then known as Queenstown. The name was changed to Pennington in 1747 and incorporated as the Borough of Pennington in 1890. Most of the present Borough was farmland from the early settlement period through the later 19th century. The Borough is 0.99 square miles in size and contains 633.6 acres. Pennington Borough has a population of 2585 citizens in the 2010 Census.

The Pennington Park and Shade Tree Commission was organized on January 13, 1915. The first goal was to maintain Kunkel Park (7 ac.) for group picnic grounds. During this time church, youth, and civic groups from the greater Trenton area came by trolley to enjoy the park. The Shade Tree Commission guided the establishment of street trees as the Borough was built up and new streets were established.

William P. Howe developed the south end of Pennington around 1910, planting 2500 shade trees along his newly developed streets. John A. Kunkel was instrumental in developing the north east section of Pennington in the late 1800's. With this long history, it is not surprising that Pennington is a town noted for its trees. Borough residents boast of the small town ambiance, always adding, "and we have beautiful trees too." A well maintained community forest just doesn't occur by accident. Pennington's success is a result of the long line of concerned and dedicated members of the Shade Tree Commission (now Committee), an enthusiastic municipal workforce, and the support of local residents.

The roadsides as well as most yards within Pennington's nearly 1 square mile in area, are heavily tree covered. The canopy or tree cover approximates 80-90%. The tree canopy not only creates an aesthetic appeal, but also adds environmental benefits such as summer cooling, buffers to winter winds, dust filtration, carbon sequestration and oxygen production. As with any living resource, change is inevitable and the health and sustainability of a community forest needs attention. This five-year plan is designed to focus the Shade Tree Committee's work for the benefit of Pennington's trees. The primary focus is on the municipality's trees along streets and open spaces.

A quick glance at Pennington's trees reveals a healthy, although maturing, well maintained resource. Soils in the Borough tend to be poorly drained with an occasional shale outcropping. The soils are fertile but have some limitations to the growth of trees. Pin Oaks grow well here and have been a favorite tree for planting in the past. However, it is a priority of today's Shade Tree Committee to add species diversity to the landscape.

Since almost a fifth of Pennington's tree inventory is Pin Oak, any future threat to the health of Pin Oaks could have a devastating impact on Pennington's trees.

Reading through the Master Plan and the Borough Open Space Index, it is evident that trees and open spaces are important to the Borough's residents. The Pennington Shade Tree Committee is not alone in the quest to retain the small town atmosphere of Pennington. Actions in this plan will augment the efforts of both the Master Plan and Open Space Index. The establishment of a Borough tree nursery is listed in the Master Plan. The Open Space Index lists various alternatives and considerations for various parcels for the nursery and will not be repeated in this plan. Keeping the Pennington Shade Tree Committee involved in the tree care recommendations for these parcels will benefit the Borough.

The Borough is nearly fully developed. The following table from the 1998 Master Plan; Borough of Pennington, New Jersey, prepared by the Borough Planning Board (with the assistance of Carl G. Lindbloom, P.P., A.I.C.P., Borough Planning Consultant) still provides an accurate summary of land use in the Borough.

Land Use Plan, 1998

USE CATEGORY	ACRES(ROUNDED)	% OF TOTAL
Single-Family	334.8	52.1
Multi-Family	32	5.0
Town Center	8.2	1.6
Town Center/Office, Residential	6	1.2
Office/Limited Business	6	1.2
Highway Business	11	1.7
Regional Office	17	2.6
Special Use	7	1.2
Recreation/Open Space*	34	5.3
Public/Semi-Public*	80	12.6
Streets/Railroad	98	15.5
TOTALS	634 (.99 square miles)	100.0

*Some use overlap occurs.

5 Years of Progress:

The implementation of the 2011-2015 Community Forestry Management Plan has been a challenging and rewarding experience. Not each and every objective was achieved, but significant accomplishments were made. Many of the objectives remain ongoing.

Annual accomplishment reports are included in Appendix 3. Highlighted achievements during the 2011-2015 plan period include:

1. Effective and efficient administration and meeting of the Shade Tree Committee.

2. Attendance at the Shade Tree Federation meetings, including maintenance of 4 CORE trained persons and up-to-date on continuing education units.

3. Numerous newspaper articles and website maintenance.

4. Distribution of a flyer for Pennington Memorial Tree Planting Program.

5. Distribution of "Tree Guide to Pennington, New Jersey". A glossy map describing the listed trees and a map of their locations.

6. Maintenance of the Pennington Shade Tree Inventory and Assessment is now handled locally rather than through the Rutgers Tree Inventory program. The Borough is in the process of upgrading its technology to provide real-time recording capability.

7. During the 2011-2015 period:

- Trees Planted = 54 (including 6 Memorial trees)
- Trees Removed = 21
- Trees Maintained/Pruned = 200
- Programs and Events
 - i. Arbor Day
 - ii. Pennington Day

On the resource side, Bacterial Leaf Scorch disease has invaded some of Pennington's stately Pin Oaks. The Shade Tree Committee continues to monitor the Red Oak family trees examined in 2008 and identified as having >30% decline. The Shade Tree Committee also disseminates information to residents about BLS at its Pennington Day Booth. In addition, the Committee is aware of the Emerald Ash Borer invasion in the region and is monitoring its impact locally.

The overall benefits to Pennington for following the third Community Forestry Plan included:

- A strong partnership with the New Jersey Forest Service Community Forestry Program.
- Training opportunities at New Jersey Shade Tree Federation meetings.
- Opportunity to engage consultants to assist in planning.
- Opportunity to receive grant funds.

- Increased liability protection.
- Having a plan of work to guide PSTC focus and efforts.
- Setting and reaching tree planting and maintenance goals.

The municipal tree resource has not changed significantly over the past 5 years. Our tree resource as quantified via inventory continues to be monitored, and was found to be in good condition. On-going challenges during the past 5 years include:

- Recovery from the damage to the tree inventory that occurred as a result of Hurricane Sandy. The Borough lost over 50 trees in mature forested areas and 12 trees came down on local and county roads taking out electricity for at least a week. The clean-up from the storm at Kunkel Park alone cost the Borough roughly \$54,000.
- The unpredictable course of BLS in Pennington's pin oaks. Pin oaks comprise at least 20% of Pennington's trees.
- The looming threat of Emerald Ash Borer in the region.

The link between the PSTC and the other agencies of the Borough has always been strong and included in the Master Plan. Pennington is essentially built out. The parks have been established and open space has been allocated. Linkages between the planning board and PSTC should be constantly nurtured to protect existing trees especially during housing upgrades and redevelopment. It would be a good exercise to review site plan requirements for tree protection during redevelopment and housing upgrades.

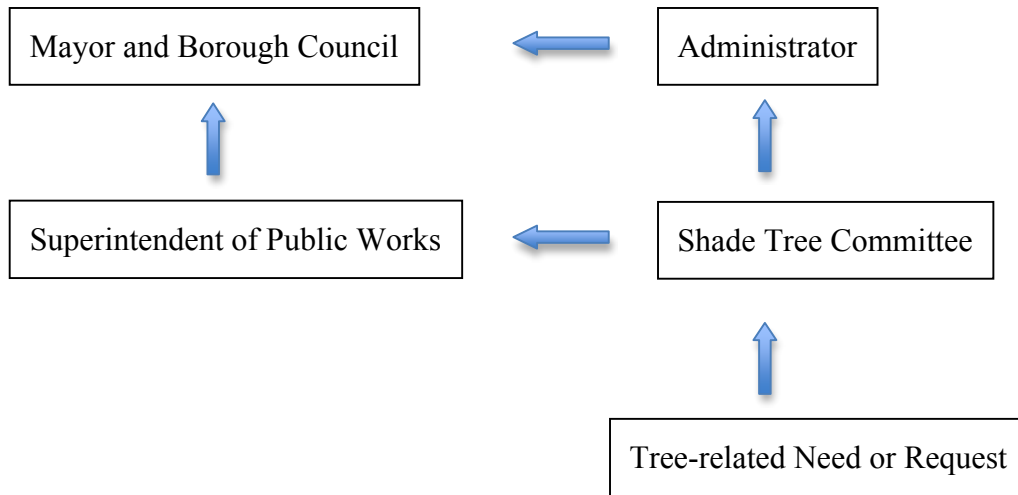
The PSTC is responsible for overseeing the management of the Borough's trees. The PSTC reports to the Mayor and Borough Council. The public works department conducts or directs any work on the Borough's trees with guidance and coordination with the PSTC.

In 2015, the PSTC delivered a revised shade tree ordinance to the Borough Council to update the process for resolving the concerns of residents about the shade trees planted along their property. That ordinance is expected to be adopted in 2016.

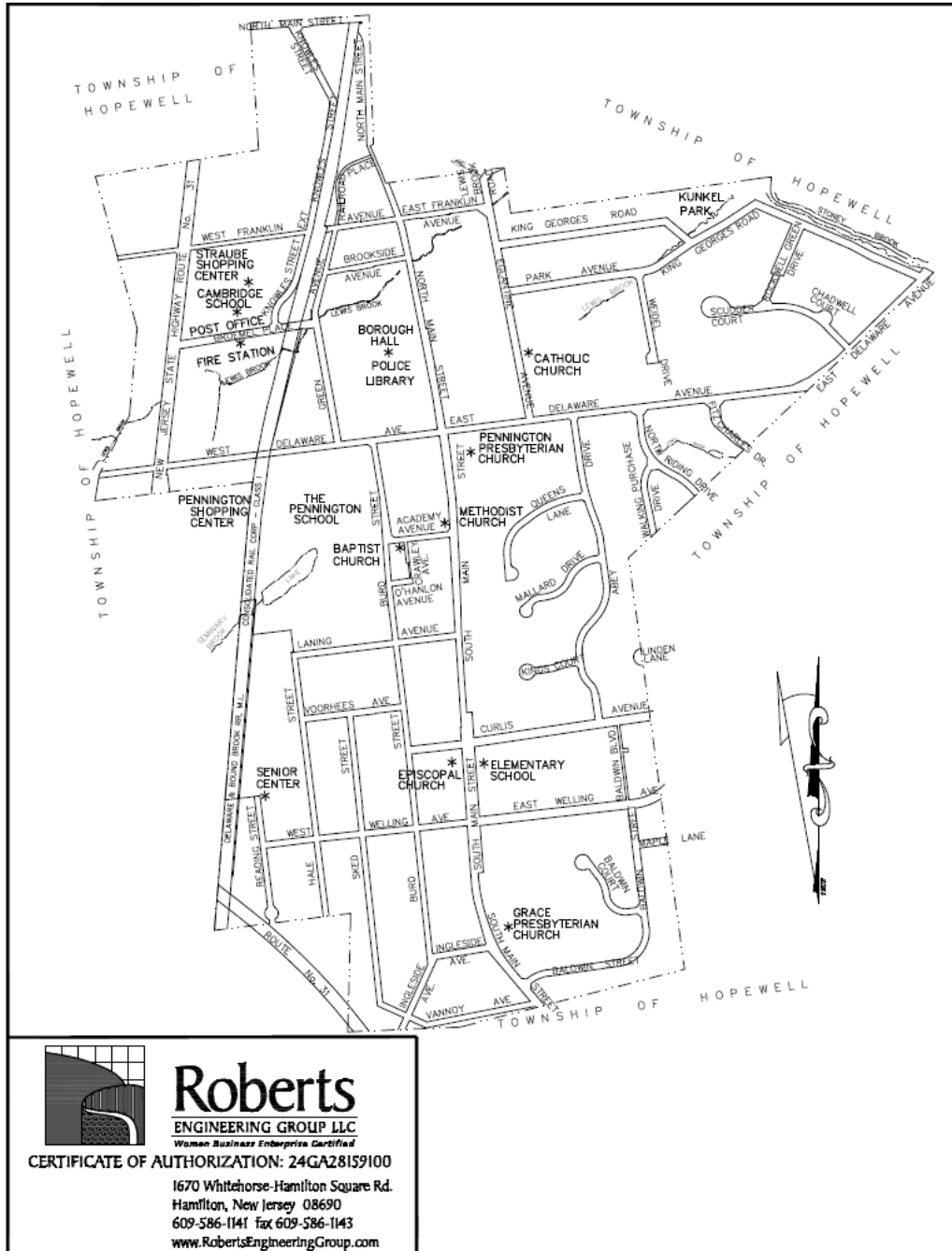
Citizen inquiries pertaining to shade trees are first directed to the town clerk or to Gabriel Rosko, Chair of the PSTC. The town clerk refers requests to the PSTC. The Chairperson, a Committee member or combination thereof conducts an on-site evaluation of the situation and coordinates remedial action with the Superintendent of Public Works. The work may be undertaken by the Borough's Public Works department personnel, or in many cases, private tree expert companies are contracted. The PSTC takes special steps to inform residents and to gain permission to work on resident's trees near the public-right-of-way. Additionally, the PSTC administers the local ordinance providing for the

planting, control, protection and improvement of shade trees and shrubbery upon public highways and public places in the Borough of Pennington. The Chairperson or a designated member will continue to act as liaison to the planning board and assist with site plan reviews.

Organizational Chart



V. Community Map



VI. Training Plan

Some training is required by the State and some training topics are identified by individual PSTC member's assessment of their needs and interests. Training is usually limited by available time, interest, money and/or opportunities.

Required Training:

CORE training is required by the New Jersey Shade Tree and Community Forestry Act for municipalities seeking approved status under the Act. The purpose of CORE training is to familiarize persons with the background of community forestry and shade tree commission, the legal aspects of managing trees, recognition of hazardous tree conditions and state planning and implementation assistance. To gain and retain approved status a municipality must have at least two persons CORE trained; one volunteer (usually the Chairperson) and one municipal employee (ideally someone from public works responsible for trees).

It is the intent of the PSTC to maintain at least the minimum CORE training requirements. Current CORE trained personnel are Morris Fabian from the Public Works Department, Gabriel Rosko, CTE (Chairman), Richard Sperry and Sean Burns (members). Gabriel Rosko also received TRAQ certification in 2015.

In addition to CORE training, there is a continuing education requirement of 8 Continuing Education Units (CEU's) per year. Any individual can obtain these credits for the municipality, not just those persons who are CORE trained. These credits can be most easily obtained by attending the Shade Tree Federation Meeting in October each year. There are also periodic training opportunities produced by the New Jersey Forest Service. The PSTC has consistently earned the required CEU throughout 2011-2015.

Elective Training

Trained experts who serve on the PSTC or who live in the community could provide elective training opportunities for DPW staff on topics such as how to apply inoculants to trees. This could help save money for the PSTC and the Borough by improving the long-term maintenance of the Borough's tree inventory.

The PSTC maintains a Shade Tree Inventory Data Base that is updated regularly to reflect tree plantings and removals. The format of the database has since been updated to be more user-friendly so that all the members of the PSTC will be able to access and update the data base as needed.

VII. Public Education, Awareness and Outreach

The PSTC conducts an annual Arbor Day program for school children in Pennington and participates in the Pennington Day street fair and community event. At a booth, PSTC members hand out leaflets and freely offer shade tree advice, as well as distribute tublings of native tree species from DEP. Many times a free tree, such as a dogwood, is offered through a free Tree Ring Competition. The Borough Tree Guide and information about the Memorial Tree Program are shared at these events.

Another public education outlet that the PSTC is considering is a regular, seasonal article, like an “Ask the Arborist” column, in a print or online local news publication that provides homeowners with information on steps that can be taken at particular times of year to improve tree health.

Tree City USA:

Tree City USA is a program created by the Arbor Day Foundation in cooperation with the NJ Forest Service to recognize municipalities of all sizes. The Tree City program is a national award given to small towns, townships, counties, and cities in recognition of outstanding stewardship in dealing with the community's tree resource. Pennington has achieved Tree City USA status for the past 28 years, making Pennington the 21st longest-serving Tree City in the state. The rewards for Pennington for maintaining Tree City status are:

- Signs for community entrances.
- A Tree City USA flag.
- A walnut-mounted plaque.
- Recognition of stewardship and the gratitude of future generations.

To achieve Tree City USA status there are requirements and standards that must be met by the Borough. These are:

- A Tree Board or Department.
- A Community Tree Ordinance.
- A Community Forestry Budget with at least \$2 per capita devoted to trees.
- An Arbor Day observation proclamation.

Homeowner Information:

Another high priority element of this plan is to provide homeowners with up to date information and knowledge about tree care. The PSTC wants to purchase and distribute existing information about tree care to Borough residents, especially new homeowners. Included will be information on PSTC policy on newly planted trees regarding homeowner's responsibilities.

- Proper pruning of newly planted and young trees.
- Mulching.
- Watering.
- Species recommendations for yard plantings and species not apt for yards plantings
- Species to create habitat for song birds.

- Identification and treatment for most common insects and diseases.
- Planting methods.
- Sidewalk/Tree root conflicts.

Much of this information is in print and available from the International Society of Arboriculture, Rutgers Cooperative Extension, and the NJ and US Forest Service, however, these materials are not free. A grant from the NJ Forest Service would enable the PSTC to accomplish this task. It is our goal to provide these information packets as hand-outs at Pennington Day, as well as to provide a link on our Borough web site.

Arbor Day:

The PSTC will conduct an annual Arbor Day program in cooperation with Pennington's public elementary school by contributing a tree and participating in the tree planting ceremony.

Big Trees:

One way to raise the awareness of youth about trees is to involve them in some way. The PSTC organized a Big Tree Hunt program in the 2006-2010 period, where students searched for and identified large specimen trees. The program has not been active in recent years, but the PSTC would like to revive this program in 2016-2020.

Newspapers/Radio/Lectures:

There are several objectives listed under Goal 2 that do not need repetition here, but are important in helping to achieve the PSTC mission.

Memorial / Honorary Tree Program:

From 2011 to 2015, the Borough planted 6 memorial or honorary trees. This program is well known within the Borough and continues to operate successfully. The PTSC will continue this program in the 2016-2021 period.

Adopt-A-Tree Program:

The PSTC has not established a formal Adopt-A-Tree program, instead opting to offer the Memorial/Honorary Tree Program discussed above.

VIII. Statement of Tree Budget

Pennington's shade tree budget from municipal funds has averaged about \$20,000 per year, including a portion of the Public Works salaries, during 2011-2015. However, that number dropped in 2015 because of a decision to allocate the time of the Public Works employees in a different manner.

The value of volunteer time is estimated to be approximately \$7000 per year. Annual reports and 'Tree City, USA' applications all indicate significant effort by the volunteers including timely and well written newspaper articles, on-site inspections, inventory and data recording, Arbor Day, coordination of tree planting and attendance at 7-8 shade tree Committee meetings annually.

The value of the time spent by the Public Works Department on tree maintenance is estimated to be \$7,500 per year. Pennington's total investment in trees including volunteer services, public works, and PSTC funds was ~\$130,000 during the past 5-year period 2011-2015.

It is anticipated that resources for the 3rd 5-year plan will be similar to the past. However, PSTC will prepare a budget request based on the needs quantified in the inventory. Pruning needs and maintenance (removals) are exceeding the capacity of the Borough employees and current budget. One of the benefits of a current tree inventory is the capability of communicating factual information in support of budget requests.

Estimated Annual Budget Summary

Pennington Shade Tree Committee Budget:

(includes Tree Purchasing, Contracted Tree Work, Education and Outreach)

2011 - 12,500 plus 7,500 (Public Works salaries)

2012 - 12,500 plus 7,500 (Public Works salaries)

2013 - 12,500 plus 7,500 (Public Works salaries)

2014 - 12,500 plus 7,500 (Public Works salaries)

2015 - 9,500 (Public Works salaries were allocated differently within budget)

Public Works Tree Budget: \$7,500

(Leaf Pickup, Pruning, Deadwood, Brush Control, Tree Planting)

Volunteers (In-Kind): \$7000

TOTAL ANNUAL ESTIMATED BUDGET in 2015: \$17,000

IX. Statement of Plan Implementation

The Borough of Pennington's Shade Tree Committee plans to continue the evolution of its excellent programs of assistance and stewardship during the next 5-year period. We have successfully completed the transition to a new Chairperson, after the retirement of a long-serving chair, and continue to engage and seek motivated individuals to serve on the Committee. Any voids in administrative tasks or technical knowledge will be identified and addressed through training and/or consultation.

The Borough's public education, awareness and outreach programs are established and have had positive impacts and rewards. Ongoing programs will be continued and augmented as described in Section VII. Pursuing Tree City, USA designation annually, continuing Arbor Day celebrations, promoting Pennington's Tree Guide, soliciting contributions to the Memorial Tree fund, newspaper articles and participation in Pennington Day are all worthy and productive outreach objectives.

The PSTC acknowledges and recognizes the value of continuing education training and has a good record of attending the annual Shade Tree Federation meetings every fall. Morris Fabian, from the Department of Public Works, has been CORE trained and acts as liaison to the PSTC. The training section of this plan, Section VI, outlines training needs for the PSTC to address. This responsibility is that of the Chairperson or their designee. Most successful training programs follow an annual plan prepared by a committee or designated lead person.

The remainder of this section will focus on the required basic implementation steps regarding:

- Tree Inventory and Assessment
- Tree Risk Assessment and Management
- Tree Maintenance and Care
- Tree Planting

Tree Inventory and Assessment:

The PSTC continues to update its inventory of trees of Borough responsibility. The data was originally recorded in database software produced by Rutgers Cooperative Extension and modified by ForesTree Consultants. Inventory includes location (keyed to the tax map), tree statistics (height, DBH, % Deadwood, Species), a general condition class (good, fair, poor, dead), comments by S. Porcella and Les Alpaugh, assessment of bacterial leaf scorch in oaks and sidewalk conflicts. The database has been modified to use common software, so all Committee Members may access and update the database. Reports still can be generated and customized to satisfy nearly any need the PSTC may have. The database is available for the PSTC to use in planning and in support of budget requests. Public Works employees are using newly available technologies to enter real-time status updates into the database from the field.

The data collected during the inventory can be invaluable in assessing and understanding the needs of the Borough's tree resources. Managing the database includes making

changes, additions and deletions as necessary to keep the information up to date. Information on planting spots, hazardous trees, trees to be removed, trees to be pruned, species diversity, sidewalk problems, elevation needs, insects and diseases and defects have all been recorded and are can be utilized in program planning and implementation, budget justification and grant applications.

Tree Risk Assessment and Management:

Pennington's trees are continually monitored by PSTC members, Public Works Department employees, and Borough residents. Additional, comprehensive information is now available as a result of the tree inventory. Since the inventory has been completed the most hazardous conditions have been addressed. Over the past five years, we have addressed the most hazardous conditions identified in the tree inventory, cleaned up from the tree loss suffered during Hurricane Sandy, and continue to monitor the growing presence of bacterial leaf scorch.

The PSTC continues to identify hazardous conditions and create work plans to address them as funding permits. The Public Works Department does its best with its limited resources to respond to the most serious cases.

Tree Planting:

In the past five years, Pennington has planted about 10 trees per year. This past year, however, lower prices per tree allowed the Boro to plant as many as 21 trees. The STC has an objective of planting 10-20 new trees each year. Achieving this objective requires planning. Available planting spots need to be identified, letters sent to residents, trees ordered and planting arrangements made. The tree inventory identifies planting spots and should facilitate this planning. Grant money from the New Jersey Forest Service is occasionally available to support tree planting. Serious thought must be given to diversifying species selection, especially in the face of Bacterial Leaf Scorch, fireblight, Emerald Ash Borer and pear maturity failures.

Tree Maintenance and Care:

The Borough of Pennington removed 39 trees since 2011. A stated goal of previous plans was to establish a 10-year pruning cycle. This goal is still valid. The goal could be modified somewhat by using tree inventory data. During the inventory, each tree was assessed for pruning and elevation needs. Many trees did not need pruning. Utilizing the inventory data and keeping it up-to-date can focus available resources on the highest needs and save money over the long run. The PSTC is working in concert with the public works department to allocate a portion of its budget each year to tree maintenance and care based on a plan prepared annually utilizing input from the inventory, DPW employees, residents and STC members. The Chairperson or his/her designee will facilitate preparation of this plan in time to be supportive of budgeting requests.

Schedule of Work

Borough of Pennington Community Forestry Program

2016

- Tree resource maintenance including: Tree Risk Assessment, Pruning and removal, Planting site identification, New tree planting
- PSTC organization including: Re-appointment of Chairperson and members as required, Membership recruitment.
- Training: Annual CEUs and new CORE training if required.
- Community outreach including: Arbor day event, Pennington Day booth.
- Reporting: file annual accomplishment report and Tree City USA application.
- Pursue goal of establishing a tree nursery in the Borough.

2017

- Tree resource maintenance including: Tree Risk Assessment, Pruning and removal, Planting site identification, New tree planting
- PSTC organization including: Re-appointment of Chairperson and members as required, Membership recruitment.
- Training: Annual CEUs and new CORE training if required.
- Community outreach including: Arbor Day event, Pennington Day booth.
- Reporting: file annual accomplishment report and Tree City USA application.
- Pursue goal of establishing a tree nursery in the Borough.

2018

- Tree resource maintenance including: Tree Risk Assessment, Pruning and removal, Planting site identification, New tree planting
- PSTC organization including: Re-appointment of Chairperson and members as required, Membership recruitment.
- Training: Annual CEUs and new CORE training if required.
- Community outreach including: Arbor Day event, Pennington Day booth.
- Reporting: file annual accomplishment report and Tree City USA application.

2019

- Tree resource maintenance including: Tree Risk Assessment, Pruning and removal, Planting site identification, New tree planting
- PSTC organization including: Re-appointment of Chairperson and members as required, Membership recruitment.
- Training: Annual CEUs and new CORE training if required.
- Community outreach including: Arbor day event, Pennington Day booth.
- Reporting: file annual accomplishment report and Tree City USA application.

2020

- Tree resource maintenance including: Tree Risk Assessment, Pruning and removal, Planting site identification, New tree planting
- PSTC organization including: Re-appointment of Chairperson and members as required, Membership recruitment.
- Training: Annual CEUs and new CORE training if required.
- Community outreach including: Arbor Day event, Pennington Day booth.
- Reporting: file annual accomplishment report and Tree City USA application.
- Renew 5-year Community Forestry Management Plan.

X. Community Stewardship Incentive Program (CSIP)

Upon approval of this plan, the PSTC will be able to apply for Community Stewardship Incentive Program grants as they become available to help offset the cost of implementing this plan. The following is a list of possible CSIP grants for Pennington. Additional or revised grants may become apparent as work progresses or unforeseen events occur.

CSIP #1: Training

Funds are needed to support training as defined in Section IV.

CSIP #2: Ordinance Establishment

Funding may be requested to hire consultants or legal counsel to review and prepare a new tree ordinance. No funds are needed specific to CSIP #2

CSIP #3: Public Education and Awareness

No funds are needed specific to CSIP #3.

CSIP #4: Arbor Day Activities

No funding specific to Arbor Day activities is needed.

CSIP #5: Tree Inventory

No funds are needed specific to CSIP #5.

CSIP #6: Tree Risk Assessment

No funds specific to Risk identification are needed. Annual inventory updates and continued vigilance by the PSTC, DPW, residents and police will continue to identify hazardous trees. Section IX: Statement of Plan Implementation.

CSIP #7: Storm damage assessment

No funds are sought for this purpose.

CSIP #8: Tree Maintenance and Removals

The spread of bacterial leaf scorch has limited our ability to keep up with the pruning needs of the borough's trees. Funds that had been designated for ongoing tree pruning are being prioritized to take-downs. The aging tree population and the declining trees are outpacing the ability of our Public Works department to keep up with the demand. We now seek funding to enhance our ability to keep up with the pruning and removal needs. This work would be contracted with a local CTE-qualified arborist. Section IX: Statement of Plan Implementation.

CSIP #9: Insect and Disease Management

We continue to monitor and respond to the presence of bacterial leaf scorch in our oaks, as the trees decline and cause hazard conditions. We have identified 82 trees that pose a safety risk and seek additional funding to minimize the decline and loss of these mature trees. The oak species comprise almost 20% of our tree population and a loss of the trees would be devastating to the borough's tree canopy. We are also concerned about the spread of Emerald Ash Borer in the region and are closely monitoring our ash tree population.

CSIP #10: Wildfire protection

No funds are sought for this purpose.

CSIP #11: Tree Planting

Funds will be requested when available to increase planting levels as per annual planting plans. Section IX: Statement of Plan Implementation.

CSIP #12: Tree Recycling:

No funds will be requested specific to tree recycling.

CSIP #13: Sidewalk Maintenance Program

Funding may be requested.

CSIP#14: Storm Water Management

No funds are sought for this purpose.

CSIP #15: Other

Plan Preparation: Historically, grants have been available for Plan preparation. This plan was prepared utilizing volunteer time.

XI. Appendix

1. Tree Planting Notification Letter
2. Pennington Code, Chapter 13, Article 1 (Establishes Pennington Shade Tree Committee)
3. Annual Reports
4. Pennington Memorial Tree Planting Program Brochure
5. Tree Guide to Pennington, New Jersey

XI.1 Tree Planting Notification Sample Letter:

2015 Planting Year

Dear Resident:

In the near future, the Shade Tree Committee and the Department of Public Works will be planting a tree in the public right-of-way in front of your house. If you have any questions or concerns about the planting, please let us know by calling or emailing the Chairman of the Committee at (609) 730-8367, gabrielrosko@comcast.net.

The varieties of trees that are planted in the Borough have been carefully selected for their desirability as street trees, and whose characteristics for consideration included height, heartiness, species diversity, rooting characteristics and general aesthetic quality.

With an important bit of help from you, the tree to be planted will grow to provide many benefits to your neighborhood and Pennington. For the first two years after planting, the tree will need water when rain is scarce. So, during the spring, summer and fall, if more than ten days pass by with no rain, you could serve your community by watering the new tree. In the evening, let a garden hose run very slowly over the root area for about twenty minutes to thoroughly soak the root zone. If you notice any problems with the tree, please notify the Shade Tree Committee or Public Works.

Thank you in advance for your help in assuring that Pennington streets will be tree-lined far into the future. Enjoy your new tree(s).

Pennington Shade Tree Committee

Gabe Rosko, Chairman
Kate Fullerton, Sean Burns,
Richard Sperry, Maura Fennessy,
and Petra Ross-McDonald

XI.2 Pennington Code:

Article I. Shade Tree Committee

[Adopted 12-2-1985 by Ord. No. 406]¹

§ 13-1. Establishment; purpose; membership.

A. The regulation, planting, care and control of shade and ornamental trees and shrubbery upon and in the streets, highways and public places of the Borough of Pennington, except state highways, unless the State Highway Department shall assent thereto, and except county highways, parks and parkways if a County Shade Tree Commission is operative and gives assent thereto, shall be exercised by and under the authority of the Borough Council. In order to aid the Borough Council in regulating the planting, care and control of shade and ornamental trees and shrubbery upon and in the streets, highways and public places, there is hereby established a Shade Tree Committee.

B. The purpose of said Shade Tree Committee shall be to recommend legislation to the Borough Council and to make recommendations regarding the planting of shade trees in the Borough generally.

C. The Shade Tree Committee hereby established shall consist of seven members, who shall be residents of this municipality and, where feasible, have experience or expertise in the area of arboriculture or related fields.

§ 13-2. Initial appointments; terms.

The first Shade Tree Committee members shall be appointed by the Borough Council within 60 days after the effective date of this article, and their terms of office shall commence upon the day of their appointment and be for the respective periods of one, two and three years. The term of each appointee shall be designated in his or her appointment. All subsequent appointments, except to fill vacancies, shall be for the full term of five years, to take effect on January 1 of the calendar year next succeeding such appointment.

§ 13-3. Organization; expenses.

A. The Shade Tree Committee shall organize within 30 days after the appointment of its total membership for the remainder of the then calendar year and thereafter annually, by the election of one of its members as Chair and the appointment of a Secretary, who need not be a member.

B. Expenses of Shade Tree Committee members in discharging official duties, including expenses incident to attendance at professional meetings, will be reimbursed up to an amount appropriated by the governing body for that purpose in the annual budget.

¹ Please note that the Borough is expected to adopt an update to this ordinance in 2016.

§ 13-4. Vacancies.

Any vacancies occurring by reason of the death, resignation or removal of any Shade Tree Committee member shall be filled for the unexpired term by the Borough Council.

§ 13-5. Powers and duties.

The Shade Tree Committee organized under this article shall have power to:

A. Recommend to the Borough Council legislation governing the regulation, planting and care of shade and ornamental trees and shrubbery now located or which may hereafter be planted in any public highway and park or parkway and public right-of-way, except such as are excluded pursuant to § 13-1A of this article, including the planting, trimming, spraying, care and protection thereof.

B. Recommend legislation to the Borough Council regulating and controlling the use of the ground surrounding the same, so far as may be necessary for proper growth, care and protection thereof.

C. Recommend to the Borough's Superintendent of Public Works the moving or the requiring of the removal of any tree or part thereof dangerous to public safety.

D. Recommend to the Borough Council the making, altering, amending and repeal, in the manner prescribed for the passage, alteration, amendment and repeal of ordinances by the governing body of this Borough, any and all ordinances necessary or proper for carrying out the provisions hereof.

E. Recommend to the Borough's Superintendent of Public Works the care, treatment or removal of any tree situated upon private property which is believed to harbor a disease or insect harmful to trees or other vegetation, readily communicable to neighboring healthy trees or other vegetation, and to enter upon private property for that purpose, with the consent of the owner thereof, provided that the suspected condition is first confirmed by a certificate issued by or on behalf of the New Jersey Department of Agriculture.

F. Encourage arboriculture.

§ 13-6. Payment of costs.

The planting of trees on public property, as provided for in the annual budget for the Shade Tree Committee approved by the Borough Council, shall be paid for by the Borough. Where the Shade Tree Committee recommends to the Council the planting of trees on private property but within the public right-of-way, trees shall be planted, provided that the landowner agrees to pay for said trees.

§ 13-7. Procedure and payment for planting or removal of trees.

A. Where a private property owner has requested that a tree or trees be planted among the public right-of-way in front of his or her property, the Shade Tree Committee shall review this request and visit the premises if necessary. The Shade Tree Committee shall consider the type or types of trees which should be planted and their location and size. These considerations shall be made in conjunction with the affected property owner. Upon completion of these considerations, the Shade Tree Committee shall forward to the Borough's Superintendent of Public Works its recommendations, accompanied by an executed agreement of the property owner who will be benefited by the trees to pay for said tree or trees.

B. Where a tree or part of a tree located upon private property is dangerous to public safety, unless public safety requires immediate removal, the Shade Tree Committee shall give the property owner 10 days' notice that it intends to recommend removal of such tree to the Borough's Superintendent of Public Works. Within that ten-day period, the property owner may request a hearing before the Shade Tree Committee, and the Shade Tree Committee shall report the property owner's objections to the Borough Council. If the Borough Council decides to have the tree or part thereof removed, the costs incurred shall be a lien against the property, unless paid by the property owner.

§ 13-8. Public improvements affecting trees.

No statute giving any person or state, county or municipal board, body or official the power or authority to lay any sidewalk along or to open, construct, curb or pave any street, or to do any similar act, shall be construed to permit or authorize any interference with or injury to a highway shade tree without the consent of the Borough Council. In all cases, the Borough Council shall reasonably cooperate with such person, board, body or official for the general public good.

§ 13-9. Estimate of expenses; annual appropriation.

A. During the month of October in each year the Shade Tree Committee shall certify to the Borough Council the estimated sum necessary for the proper conduct of work during the ensuing fiscal year, which shall include the sums estimated to be expended for such of the following terms as it is anticipated expenditure will be made for:

(1) Expenses of Shade Tree Committee members in discharging official duties, including expenses incident to attendance at professional meetings.

(2) Purchase of trees and shrubbery.

(3) Purchase of necessary equipment and materials and the cost of services for the prudent promotion of the work.

B. The Borough Council shall annually appropriate such sum as it may deem necessary for said purposes.

§ 13-10. Rules of procedure; meetings.

The Shade Tree Committee shall adopt rules or procedures, which shall provide for a regular public meeting each month.

§ 13-11. Development of Master Plan for planting of trees.

The Shade Tree Committee shall develop and recommend to the Borough Council a Borough Master Plan, setting forth those areas of the Borough in need of shade trees along the public right-of-way, the type of tree which should be planted and the approximate locations. The Master Plan should consider the type of zoning, the climate, soil conditions and other factors necessary to evaluate and develop such a plan. Upon completion of the Master Plan, any recommendations for the planting of trees made pursuant to this section should make reference to this plan, and any variance from the plan should be explained.

XI.3 Annual reports:

Reports have been filed annually with the Community Forestry Program. Below is the most recent report.

Borough of Pennington, New Jersey

COMMUNITY FORESTRY MANAGEMENT PLAN

Annual Accomplishment Report - 2015

Program Administration

Members of the Pennington Borough Shade Tree Committee for 2015 were Gabriel Rosko (Chair), Sean Burns, Kate Fullerton, Maura Fennessy, Richard Sperry, and Petra Ross-McDonald.

Training and Professional Development

Gabriel Rosko, as Chair, participated in the International Society of Arboriculture's Tree Risk Assessment Qualification program. This program took place October 22-24, in Hightstown, New Jersey. He is now fully certified to conduct Tree Risk Assessments. Ms. Fullerton of the Shade Tree Committee attended the Shade Tree Federation Convention in Atlantic City, New Jersey on October 24, 2015. We currently have 3 volunteer members of the committee who are CORE trained: Gabriel Rosko, Sean Burns, and Richard Sperry. Morris Fabian, a Municipal employee, is also CORE trained and attended the Shade Tree Federation Convention in Atlantic City, New Jersey on October 23, 2015.

Public Education/Awareness/Outreach

Arbor Day was observed in Pennington Borough with a ceremony outside the Toll Gate Elementary School on Friday, April 24, 2015. The three First Grade classes from the Toll Gate School joined members of the Borough Council, Shade Tree Committee and the public for the event. Mr. Fabian of the Public Works Department educated those present on the proper technique for planting a tree, while planting a Kwanzan Cherry tree. Mr. Rosko gave a presentation on the history of Arbor Day and the environmental benefit of trees. This was followed by the Mayor reading his Arbor Day Proclamation and a few of the First Graders reading their poems about trees. At the end of the event, gift bags containing a PSTC produced Arbor Day coloring book and "cookies" – thin cross slices of a tree branch imprinted with a tree and PSTC on them – were handed out to all the children.

The Shade Tree Committee also had a booth at the annual street fair, Pennington Day, held in mid-May. Committee members took turns working in the booth from 9am-4pm. Pamphlets and fact sheets about tree maintenance, Emerald Ash Borer and the Asian

Longhorn Beetle, were available. Almost 600 Red Bud and White Pine tublings were handed out to the public. A drawing was held for the person who most accurately determined the age of a tree based on the number of tree rings (shown on a large tree cross section). The local resident won a Saucer Magnolia donated by a local nursery.

The Committee continued to administer the Borough Memorial Tree Program. There were requests for four Memorial trees during 2015.

Pennington Shade Tree Ordinance and Committee Activities




A major effort during the fall of 2015 was thoroughly reviewing and re-writing the Pennington Shade Tree Ordinance. Over the past few years, there have been conflicts with residents regarding the ownership and responsibility of the Borough Street Trees. By reviewing the ordinance, which is pending approval by the Borough Council, we hope to be more clear about the importance of tree health, proper tree location, and tree maintenance with our fellow residents. During the review of this ordinance, we discovered that our group is actually a Borough Committee and not a Commission, which is reflected in our changed language within current documents.



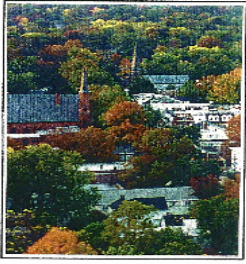
Due to our work on the Shade Tree Ordinance, we postponed our work on reviewing the Community Forestry Plan, which we are currently updating. The Committee was able to achieve one goal of the Plan: we have revised our tree inventory spreadsheet so all Committee members and Public Works employees can update the inventory in real-time, making it far more useful.

Tree Budget

The approved Shade Tree Committee budget for 2015 was \$9,500. Due to budget constraints, our budget has been limited the past few years, so we have been creative in order to maintain the tree coverage we want in Pennington Borough. The PSTC planted 11 trees and removed only 4 trees during 2015. Public Works did spend 64 man hours pruning Borough trees, which is felt to enhance the life-span of these trees.

XI.4 Pennington Memorial Tree Planting Program Brochure:

 Introduction <p>The Pennington Shade Tree Commission was created by an ordinance in 1915. This brochure reflects a continuing effort to promote the planting of shade trees along borough streets in a cooperative effort between Pennington and its residents and friends.</p> Dedicated Trees <p>Any person can purchase a tree in memory of a loved one or in honor of a loved one. This is a wonderful way to dedicate a tree to a loved one and at the same time contribute to the beautification of our town. When the tree is planted, a small, inscribed granite stone can be installed at the tree base. The 6" X 12" stone limits the inscription of a name to 14 spaces. The stone will be placed and secured in the ground when the tree is planted.</p> Planting of Trees <p>All trees will be planted along a public street or in a Borough park. The Shade Tree Commission will make the final determination as to tree planting locations and species. Trees will be planted in the planting season, either fall or spring, which follows receipt of the request.</p>	Cost/Responsibilities <p>The donor's contribution will go toward the purchase of the tree and the stone marker. This is a one time cost of \$180. The Borough of Pennington and the Shade Tree Commission are not responsible for replacement of any tree or stone once installed.</p> Procedures <p>Please complete and return the last panel of this brochure to:</p> <p>Pennington Shade Tree Commission 30 North Main Street Pennington, NJ 08534</p> <p>Please make checks payable to:</p> <p>Borough of Pennington</p> <p>Upon receipt of payment you will be notified of the tree species, street location and anticipated planting date.</p> 	Tree Request Form <p>Name: _____ Address: _____ _____ Day Phone: _____ Evening Phone: _____</p> <p>Plaque Inscription:</p> <p>Circle one: In Memory of In Honor of</p> <p>_____ (Print name in all capitals)</p> <p>_____ (Years of birth/death or current year only)</p> <p>Mail or deliver this form with your check made payable to Borough of Pennington to:</p> <p>Pennington Shade Tree Commission 30 North Main Street Pennington, NJ 08534</p> 
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 <p><i>South Main Street c. 1926</i></p> <p><i>This brochure was designed to inform the public about a program offered by the Pennington Shade Tree Commission.</i></p>  <ul style="list-style-type: none">~ Any person can purchase a tree to honor a loved one or in memory of a loved one.~ The tree will be planted in the Borough to help enhance the beauty of our community.~ A small marker will be inscribed and secured to the ground near the tree.	<div>PENNINGTON SHADE TREE Commission</div>  Tree Planting Program 30 North Main Street Pennington, N.J. 08534 609-737-0276
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Pennington Shade Tree Commission
Pennington NJ
200

XL.5 Tree Guide to Pennington:



300 Pine Street

Welcome to Pennington

Located in Mercer County in central New Jersey, Pennington is a community known for its small-town ambiance and tree-lined streets. Called Queenstown in the early 1700s, it quartered British and Hessian troops during the Revolutionary War.

Pennington incorporated as a borough in 1890. The Pennington Park and Shade Tree Commission was organized in 1915 to maintain Kunkel Park, a seven-acre reserve bordering Stony Brook. The park was named for John A. Kunkel, who was instrumental in developing the northside part of town in the late 19th century. Beginning about 1910, William P. Howe, a local nurseryman, developed the borough's south end, where he planted 2,500 shade trees.

Trees cover more than 80 percent of Pennington's one-square-mile area. The borough straddles the watersheds of the Delaware and Raritan rivers. Because it sits on a shale formation, Pennington's soils tend to be poorly drained. Pin oaks do well on such soils, and many have been planted on Pennington streets. Other well-represented species include calico pear, Norway spruce, sugar maple, Norway maple, red oak, and zelkova. Kunkel Park has many nice specimens of native forest trees such as American beech, black oak, and shagbark hickory. More than 50 tree species can be found throughout the borough.

Tree Guide to
**Pennington,
New Jersey**



A Tree City USA

Pennington Shade Tree Commission
30 North Main Street
Pennington, NJ 08531




Leaf and seed pods of a London plane tree

A sampler of trees in Pennington, N.J.

ab: AMERICAN BEECH (*Fagus grandifolia*). Grows wild in mature upland forests. Papery, sharp-toothed leaves remain through winter. Smooth gray bark ideal for carving. Wildlife feed on its triangular nuts. The similar European beech, including several copper-leaved varieties, is a popular ornamental.



ad: AMERICAN BASSWOOD (*Tilia americana*). Name derives from flannel inner bark (bass), once used for making rope. Also known as American linden and bass tree for its small, white-to-pink flowers. Grows 20-100 feet. Similar linden-like tree is an import from Europe.



ae: AMERICAN ELM (*Ulmus americana*). Vase-shaped spreading crown makes this a favorite shade tree. Many killed off by Dutch elm disease, which arrived in 1930s.



ah: AMERICAN HOLLY (*Ilex opaca*). Ornamental evergreen native to coastal plain. Shiny, dark-green, sharply pointed leaves, red berries on females. Grows 40-80 feet.



ap: AUSTRALIAN EUCALYPTUS (*Eucalyptus regnans*). Long, thick needles in pairs. Similar to native red pine.



av: ARBOREUS VINE (*Hopsa arborescens*). Calicheal evergreen often planted as a hedge or windbreak. Native to New England and Canada.



ba: BALTIC CHERRY (*Prunus pennsylvanica*). Native to Mediterranean. Grows in Atlas Mountains of North Africa. Cedar of Lebanon (ced) is a closely related species.



bb: BLACK CHERRY (*Prunus serotina*). Pioneer species, often colonizing old fields.



bc: BURNING BUSH (*Elaeagnus argentea*). Shiny, silvery-green leaves, yellow flowers. Grows 10-20 feet. Native to the eastern United States.



bd: BUTTERNUT (*Juglans hinckleyi*). Large, heart-shaped leaves, yellow flowers. Grows 40-60 feet. Native to the eastern United States.



be: CAMPESTRIS (*Quercus prinus*). Large, heart-shaped leaves, acorns. Grows 40-60 feet. Native to the eastern United States.



bf: CHINA DOGWOOD (*Cornus kousa*). White-flowered Asian species and common ornamental. Example: Howe Commons.



bg: GINGKO (*Ginkgo biloba*). Asian species at least 100 million years old. Fan-shaped leaves turn yellow and drop off in late fall. Female's produce stinging, plant-like fruit.



bh: HONEYLOCUST (*Gleditsia triacanthos*). Thornless variety widely planted as street tree. Long seed pods and compound leaves with small leaflets. Example: Pennington Market.



bi: EASTERN HEMLOCK (*Tsuga canadensis*). Graceful evergreen and widely planted ornamental. Often grown as a hedge.



bj: JAPANESE MAPLE (*Acer palmatum*). Asian native and popular landscape tree. Over 250 varieties include some with red or bronze leaves.



bk: KAWAKAWA CHERRY (*Prunus serrulata*). Variety of oriental cherry. A short-lived street tree. Profuse pink flowers bloom in early spring.



bl: LITTLE LEAF LINDEN (*Tilia cordata*). See ab: American basswood.



bm: MAHOGANY (*Swietenia mahoe*). Large, heart-shaped leaves, red flowers. Grows 40-60 feet. Native to the Caribbean.



bn: NORWICH RED OAK (*Quercus rubra*). State tree of N.J. and common throughout state except near the shore. Grows 70-90 feet. Leaves pointed lobes, turn red in fall. Bark ridged, with flat gray areas. Important lumber species.



bo: RED MAPLE (*Acer rubrum*). Also known as swamp or water maple. Common N.J. forest tree. Red flowers bloom in early spring. Seed pods, leaf scars, and new twigs are red. Most Pennington specimens are smaller trees. Many on grounds of post office on Broedel Place.



bp: AMERICAN SYCAMORE (*Platanus occidentalis*). Native to eastern U.S. and common along streams. One of largest hardwoods. Can live 500 years. Paddy white and yellow bark, broad leaves, pendulous round seed heads. "Sycamores" planted as street trees are usually the related London plane tree.



bq: SOUTHERN OAK (*Quercus austrorum*). Native of Far East. Serrated leaves with prickly teeth similar to chestnut's. Holds leaves well into winter. Examples: W. Welling Avenue.



br: SHADBLOW (*Amelanchier canadensis*). Grows wild in swampy woods. Pink white flowers bloom in April, at time of shad run in Delaware River.



bs: SUGAR MAPLE (*Acer saccharum*). Once a popular street tree because of bright red and yellow fall colors, but planted less frequently now because its shallow roots crack sidewalks. Gray, deeply furrowed bark forms long plates on older specimens.



bt: WHITE OAK (*Quercus alba*). Fast growing, reaching 60-80 feet. Narrow, willow-like leaves are without lobes or teeth. A southern species — central N.J. is northern end of its range.



bu: WATER OAK (*Quercus nigra*). Southern oak with range extending into New Jersey. Prefers wet soils. Small, wedge-shaped leaves. Bark dark gray, smooth. Example: Park Avenue.



bw: WHITE OAK (*Quercus alba*). Slow-growing and long-lived hardwood native to upland forests and N.J. Pine Barrens. Name derives from its light-gray bark. Leaves have rounded lobes typical of other species in white oak group. Acorns can be eaten, if soaked in running water. Example: Tel. Gate School, S. Main Street (pinus).



bx: THIN POPLAR (*Populus deltoides*). The tallest American hardwood, reaching 200-plus feet. Noted for straight trunk and unbranched branches. No



bl. black locust (*Rhus glabra*). Legume native to Appalachians and Ozark mountains but widely planted. Compound leaves with oval leaflets. Tree growing. Hard wood used for fence posts. Makes excellent firewood.

br. black oak (*Quercus velutina*). Similar to northern red oak (no) but with darker, more fragmented oak. Examples: Kinkaid Park.

br. blue spruce (*Picea procera glauca*). See: Colorado spruce.

br. black walnut (*Juglans nigra*). Cold, pointed leaves with finely serrated leaflets. Fruit: yet green-green husk surrounding edible nut.

c. NORFOLK CATALPA (*Catalpa bignonioides*). Large, smooth edged, heart shaped leaves and seed pods up to 12 inches long. Large white flower clusters. Grows 50-80 feet.

ch. CHINA OR FRENCH (*Ulmus laevis*). Center of the Bible and native to Asia Minor. Horizontal, spreading branches.

cp. CALLERY PEAR (*Pyrus calleryana*). Asia. widely planted as a street tree. Abundant white flowers in early spring. Retains leaves well into the fall.

co. COLORADO SPRUCE (*Picea mariana*). Evergreen native to Rocky Mountains but a widely planted ornamental. Needles are four sided, flattened. Color varies from dull green to silvery blue. The blue spruce (spined) is a variety.

fr. LORDBURY POPLAR (*Populus nigra*). Mediterranean. Import. Fast growing, dense, columnar shrub species planted as ornamental or in rows of windbreak.

fr. LONDON PLANETREE (*Platanus acerifolia*). See: American sycamore.

fr. NORWAY SPRUCE (*Picea abies*). European evergreen widely planted in U.S. Reddish brown bark, long, pycnoclous cones and branches. Common throughout Pennsylvania.

fr. ORANGE (*Mandarin orange*). Native to A. dense but widely planted as a landscape. Known for large, juicy fruit.

gr. PIN OAK (*Quercus palustris*). Tall, fast growing, common in floodplains. Downward pointing lower branches in clusters of horizontal lines. Leaves are deeply indented, and may remain on tree through the winter. Susceptible to bacterial leaf scorch.

pr. PRINCESTRIT (*Paulownia tomentosa*). Also called emperor tree. Native to China. Large heart-shaped leaves. Variegated: purplish flowers bloom in early summer.

re. EASTERN RED CEDAR (*Juniperus virginiana*). Invasive species common to roadside fields. Blue pointed fruit. Reddish, fibrous bark. Not a true cedar but a member of the juniper family.

sg. SWEETGUM (*Liquidambar styraciflua*). Native tree, preferring swampy soils. Star shaped leaves, turn yellow in fall. Spindle-shaped fruit. The trunk develops from a single aromatic resin. Examples: W. Delaware, King George Road.

sh. SHAGBARK HACKBERRY (*Corylus avellana*). Prefers upland slopes and well drained soils. Compound leaves. Distinctive pebbly bark. Grows 70-100 feet. Examples: Kinkaid Park.

sh. SILVER MAPLE (*Acer saccharinum*). This fast growing native species prefers moist soils. Because of its yellow color it is no longer planted as a street tree in Allentown. Deeply lobed leaves are silvery underneath and turn bright yellow in fall. Leaves are long, lance-shaped leaves can be smooth or lobed. Native to the Midwest. Wood used for shingles on pioneer homes. Examples: corner of York and 4th and Third Street.

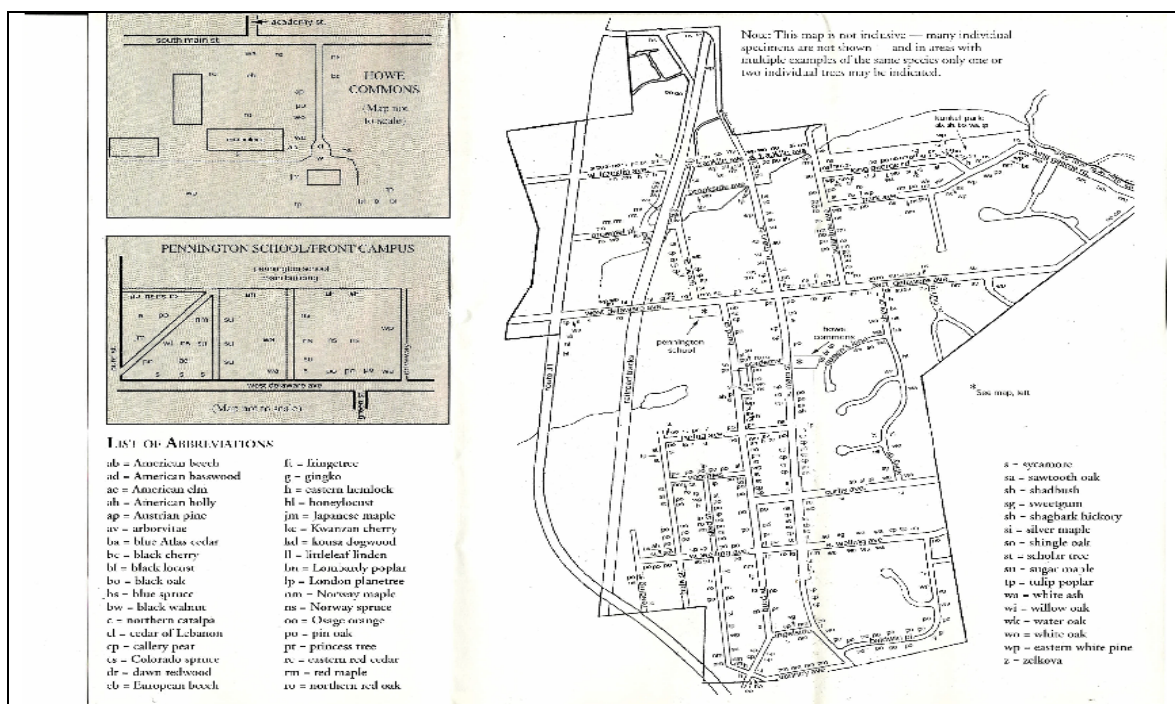
sh. SCHWARTZ TREE (*Sophora japonica*). Formerly known as *Sophora japonica* and native to the Far East. Compound leaves, white flowers, and green seed pods in clusters (in fall).

wa. WHITE ASH (*Fraxinus americana*). This large narrow leaved tree grows to a height of 80-100 feet. Strong, stiff wood has long been used in the making of baseball bats. Compound leaves, four leaflets. Ash-gray, deeply furrowed bark.

wp. EASTERN WHITE PINE (*Pinus strobus*). Tall (80-200 feet) native evergreen. Buds were once used for the stems of sailing ships. Long slender needles in groups of five (inches), light. Cones 4-8 inches.

z. ZELKOVA (*Elkornia carnea*). This Asian Elm is a common street tree and is often planted as a replacement for the American Elm because of its similar spreading, vase-shaped crown. Zelkova can grow 50-60 feet high. They have compound, serrated leaves and smooth, reddish brown bark.

Small tree trunk photo showing bark texture.



- s = sycamore
- sa = sawtooth oak
- sh = shadblow
- sg = sweetgum
- sh = shagbark hickory
- sl = silver maple
- sn = shingle oak
- st = scholar tree
- su = sugar maple
- tp = tulip poplar
- wa = white ash
- wi = willow oak
- wc = water oak
- wo = white oak
- wp = eastern white pine
- z = zelkova