

ORDINANCE NO. 2011 - \_\_\_\_\_

**AN ORDINANCE OF THE HILLTOWN TOWNSHIP BOARD OF SUPERVISORS AMENDING CHAPTER 140 OF THE CODE OF HILLTOWN TOWNSHIP, SUBDIVISION AND LAND DEVELOPMENT ORDINANCE, RELATIVE TO SECTION 140-26 COMMUNITY FACILITIES AND OPEN SPACE AND SECTION 140-37 LANDSCAPING AND STREET TREES.**

The Hilltown Township Board of Supervisors upon review by the Bucks County Planning Commission and Hilltown Township Planning Commission hereby enacts and ordains the following Ordinance:

**Article I Section 140-26. Community Facilities and Open Space, Paragraph D and E** are revised to read as follows and Paragraph F is deleted in its entirety:

- D. Open space area landscaping shall conform to Section 140-37.D of the Subdivision Ordinance.
- E. Designation of and permitted uses on open space land shall conform to requirements of Section 160-58 of the Zoning Ordinance.

**Article II Section 140-34. Landscaping and Street Trees** is revised to read as follows:

**Section 140-37 Landscaping and Street Trees**

- A. General Landscaping Requirements
  - 1. Where vegetation exists that meet the objectives and planting standards of this Ordinance, it shall be preserved and may be used to meet planting requirements. Photo documentation of the existing vegetated condition must be submitted for review. Quantities, size, species, genus, and locations of existing materials must be shown on the plans and verified by the Township. Where the Township allows existing vegetation to be counted toward meeting the buffer requirements (including berm requirements) of the Zoning Ordinance, the vegetation shall not be removed except for dead plants, or exotic invasive species, and noxious weeds as defined by Act 72 of 1994, as amended. Additional plantings shall be required if the existing vegetation is not adequate to meet the buffer standards for density, width, or size. The vegetation shall be protected by recorded plan note to ensure that it remains as a part of the subdivision or land development.
  - 2. Any plant material which does not survive, exhibits poor growth habits, is diseased, is missing, or is damaged by deer or natural causes within eighteen (18) months from the date of acceptance by the Township, or eighteen (18) months following installation of replacement landscape material, whichever is later, shall be replaced by the developer.
  - 3. Financial security shall be posted with the Township in an amount equal to the estimated cost of the trees and plantings, to be released eighteen (18) months

from Township acceptance of the installation or installation of replacement trees pursuant to Section 140-37.A.2. above.

4. Prior to acceptance of street tree installation/replacement and prior to acceptance of the eighteen (18) month maintenance period, all street trees must be pruned to provide a clear zone of seven (7) feet above the sidewalk (if existing) and curb. Tree branches shall be pruned in accordance with the standards of the Tree Care Industry Association (formerly the National Arborist Association).
5. All plant material shall be protected from deer damage. Any material damaged by deer prior to Township acceptance and/or completion of a maintenance period must be replaced by the developer.

#### B. Plant Material Specifications

1. Names of plants shall agree with the nomenclature of Standard Plant Names, as adopted by the American Joint Committee on Horticulture Nomenclature, 1942 edition, as amended; size and grading standards shall conform to those specified by the American Association of Nurserymen in the latest edition of the USDA Standards for Nursery Stock. No substitutions shall be permitted except by written permission of the Township.
2. Quality. All plants shall be typical of their species or variety and shall have normal, well-developed branches and vigorous fibrous root systems. All plants shall be nursery-grown unless otherwise stated and shall have been growing under the same climate conditions as Hilltown Township for at least two years prior to the date of planting. Written verification of nursery/location shall be provided to the Township for approval prior to installation. All plants which are found unsuitable in growth or condition or which are not true to name shall be removed and replaced with acceptable plants. No plants with trunk damage or scarring shall be installed. All nursery installed trunk wrapping must be removed at the time of installation to permit inspection of the trunk condition.
3. Preparation of Plants. All precautions customary in good trade practice shall be taken in preparing plants for moving. All balled and burlapped plants shall be dug to meet or exceed the USDA Standards for Nursery Stock.
4. Delivery. Plants shall be packed, transported, and handled with the utmost care to ensure adequate protection against injury.
5. Pruning – Each plant shall be pruned to preserve the natural character of the plant in a manner appropriate to the particular requirements. Branches should be thinned by approximately twenty-five (25) percent by removal of crossing, damaged, or competing limbs back to the major crotch. The leader is to be left intact. Pruning shall comply with ANSI A300 Tree Pruning Best Management Practices (Revised 2008).
6. Plant Material – Trees shall be nursery grown stock of specimen quality. They shall be of symmetrical growth or typical of the variety and supplied from sources in the same hardiness zone as Hilltown Township, and free of insect or disease problems.

7. Required plant material shall meet the genus, species, and minimum size requirements as specified in the Township's Plant List contained in Appendix KH of this Ordinance.

8. Installation.

(a) All street trees and buffer trees to be installed shall be balled with untreated burlap in accordance with American Association of Nurserymen Standards. The ball depth shall be not less than 60 percent of the ball diameter, and in all cases, contain the maximum of the fibrous roots of the tree. The following standards shall apply:

<u>Caliper</u>	<u>Minimum Ball Diameter</u>
2 to 2½ inches	28 inches
3 to 3½ inches	32 inches
3½ to 4 inches	36 inches
4 to 5 inches	44 inches
5 to 6 inches	54 inches

(b) Excavated plant pits shall be a minimum two (2) feet wider than the ball size.

(c) Backfill mix for the excavated plant pit area shall be composed of topsoil, compost, or other recommended material.

(d) Trees shall be supported in accordance with American National Standards (ANSI) A 300 requirements. Tree guying shall be removed one (1) year after planting.

(e) If used, tree wrapping paper shall not be installed prior to delivery to the project site. All tree wrapping material shall be removed one (1) year after planting.

(f) All plantings shall be mulched to a depth of three (3) inches in a six (6) feet diameter ring around the base of each tree or continuous beds if trees or shrubs are less than six (6) feet apart.

C. Street Landscaping

1. Trees within the right-of-way of a Township street shall not be removed without Township approval except removal of trees within the clear sight triangle, removal of invasive species, diseased trees, and dead trees, or removal of trees determined by the Township to be in poor health.

2. Street trees shall be planted along all existing and proposed streets within any land development or major subdivision where suitable street trees do not exist. Street trees shall not be required for a minor subdivision. Trees shall not be planted opposite each other but shall alternate.

3. Street trees shall be planted within the street right-of-way except where the Township agrees suitable trees are already in place. (Refer Appendix A – Typical Roadway Half Section.)
4. Street trees shall be selected and coordinated to provide adequate separation from overhead and underground utilities. (Refer Appendix K) A note shall be included on all subdivision and land development plans indicating that prior to installation of street trees, tree location and species will be reviewed by the Township relative to the location of installed utilities. If a potential conflict is determined by the Township, tree locations and species must be revised.
5. Street trees shall be selected to create uniformity and cohesiveness within a development, limiting the number of varieties of trees, and installing trees that have similar growth and shape patterns.
6. “Medium to large” street trees shall be planted at intervals of not more than forty (40) feet “Small” street trees shall be planted at intervals not to exceed thirty (30) feet. (Refer Appendix K)
7. Street trees shall meet the following standards:
  - (a) At the time of planting, medium to large street trees shall have a trunk diameter of not less than three (3) inches measured six (6) inches above grade; small street trees shall have a trunk diameter of not less than two and one half (2.5) inches measured six (6) inches above grade.
  - (b) Branching Height – The height of branching shall bear a relationship to the size, species, and location of the tree. Trees selected for street tree use between curb and sidewalk shall have a minimum clearance height of seven (7) feet above grade before branching begins.

#### D. Landscaping of Parking Areas

Any subdivision or land development application that includes an off-street parking facility shall propose landscaping of all such facilities. An off-street parking facility includes the designated parking areas and any appurtenant surfaced areas upon which a vehicle is designed to maneuver, including, but not limited to, all parking stalls, loading areas, driveways, and areas for maneuvering. Every off-street parking facility shall be landscaped so that fifty (50) percent of each facility will be shaded with trees based upon the anticipated tree crowns at maturity. Development of such canopy shall be in accordance with the following:

1. The amount of facility that will be shaded at maturity shall be determined by using the appropriate percentage of the crown based upon whether the tree is a medium to large tree or small tree as included within the Deciduous Tree List (Refer Appendix K of this Ordinance), and on their location relative to the parking facility. A thirty-five (35) feet diameter crown shall be utilized for trees included on the Medium to Large Deciduous Tree List; a twenty (20) feet diameter crown shall be utilized for trees included on the Small Tree Deciduous List.

2. Trees not included on the Medium to Large Deciduous Tree List or Small Deciduous Tree List may be used as parking lot shade trees, if approved by the Township. No one species shall comprise more than twenty five (25) percent of the total number of parking lot trees.
3. Trees (existing trees to be preserved and proposed trees) shall receive twenty-five (25) percent, fifty (50) percent, seventy-five (75) percent, or one hundred (100) percent shading credit based upon their location relative to the parking area. Areas where canopies overlap shall not be counted twice. Where the actual tree crown based upon species/location is less than one of the established percentage increments, the credit shall be “rounded” down to the next increment. (For example: If a crown will result in a large tree having an 800 SF of shading, the shading credit is reduced to seventy-five (75) percent (722 SF) based upon the shading credit chart). If the site has two (2) or more separate parking areas, the amount of shading shall be calculated separately for each facility. Refer Appendix C.

**Shading Credit Chart**

	100%	75%	50%	25%
Medium to Large Tree	962 SF	722 SF	481 SF	240 SF
Small Tree	314 SF	236 SF	157 SF	79 SF

4. A Parking Facilities Shading Plan shall be submitted with any subdivision or land development application including an off-street parking facility. The plan shall clearly show (graphically) all surfaced areas included in the calculation of the amount of the facility to be shaded. Trees shall be drawn to scale representing the canopy size at maturity as listed in the Deciduous Tree List.
  - (a) The shading plan shall also include a table identifying the quantity and type of trees used; the percentage of shade credited to each; and their corresponding canopy size.
  - (b) All off-street parking facilities shall be indicated on the shading plan, and the total area calculated shall be noted in the shade calculation table. Surfaced areas for automobile dealerships, lumber yards, and similar facilities as determined by the Township that are used for display, sales, service, and vehicle storage may be relieved of fifty (50) percent shading requirement as follows:
    - (1) The Township may accept a fee-in-lieu-of the fifty (50) percent shading requirement,
    - (2) The Township may accept an applicant’s offer to plant the required number/size of trees on riparian areas that may or may not be owned by the Township, or other Township owned property as designated by the Township. Where trees are to be planted on privately owned land, a conservation easement must be recorded at the Bucks County Courthouse, in a manner acceptable to the Township, to guarantee preservation of the plant material.
  - (c) Sample Shade Calculation Table:

Tree Label	Botanical Name/ Common Name	100% Shading Credit (SF)	75% Shading Credit (SF)	50% Shading Credit (SF)	25% Shading Credit (SF)	Total Credit (SF)
T1						
T2						
T3						
Total Tree Shade						
Total Paved Area						
Percent of Shade Coverage						

5. A minimum six (6) feet by six (6) feet planting area shall be provided for each tree planted in a tree well or planter strip. A minimum four (4) feet by eight (8) feet planting area shall be provided for each tree planted in an island planter. Planter dimensions are measured from the interior side of the curb or other impervious surface. Centerline of trees must be planted at a minimum twenty-four (24) inches from the face of curb or other impervious surface (where curb is not utilized). A two (2) feet overhang for vehicles into the planter area is allowed as long as trees are installed a minimum of four (4) feet from the edge of the parking area.
6. Planting areas shall contain soil, shrubs, and/or living groundcover with two (2) inches of natural bark or root mulch. Dyed mulch may not be utilized. Interlocking pavers and decomposed granite may also be utilized in heavily used areas.
7. Proper planting is essential to achieve the best growth of the tree. This includes, but is not limited to: tree handling, tree spacing, tree well size, soil composition, irrigation, and maintenance. The entire tree planting area (tree well, island or strip) shall be excavated to a depth of three (3) feet. The planter area shall be backfilled with native soil and necessary amendment prior to tree planting. All planting areas shall have a minimum of twelve (12) inches, of topsoil.
8. All plantings shall be able to survive soot, gas fumes and salt. Trees which have low growing branches, gum or moisture which may drop on vehicles; or blossoms, thorns, seeds or pods which may clog drainage facilities, shall not be installed adjacent to streets, parking lots, sidewalks, pedestrian paths, and drainage facilities.

E. Open Space Plantings.

1. The applicant shall provide a method of physically delineating open space areas from private lots. Such methods shall include shrubs, trees, markers, fencing, or other methods acceptable to the Township. Trees, shrubs, markers, or fencing shall be placed on the open space at its boundary. Where hedge plant material is provided as screening or a barrier between private lots and open space, additional markers or plant material for delineation are not necessary.
2. A plan for control of noxious weeds, as defined by the Noxious Weed Control Law (Act 72 of 1994, as amended), shall be submitted for approval by the

Township for all open space areas. The control plan may include periodic cutting, grubbing, foliar spray, basal bark herbicide application, soil application, or a combination of methods. Control plan shall be determined based upon the extent of infestation, quality of native vegetation, existing natural resources (floodplains, wetlands, steep slopes), natural habitat disturbance, etc. Noxious weeds include, but are not limited to, the following:

- (a) *Cannabis sativa*, commonly known as marijuana.
  - (b) The *Lythrum salicaria* complex: Any nonnative *Lythrum* including, *Lythrum salicaria* and *Lythrum virgatum*, their cultivars and any combination thereof.
  - (c) *Cirsium arvense*, commonly known as Canadian thistle.
  - (d) *Rosa multiflora*, commonly known as Multiflora rose.
  - (e) *Sorghum halepense*, commonly known as Johnson grass.
  - (f) *Carduus nutans*, commonly known as musk thistle.
  - (g) *Cirsium vulgare*, commonly known as bull thistle.
  - (h) *Datura stramonium*, commonly known as jimson weed.
  - (i) *Polygonum perfoliatum*, commonly known as mile-a-minute.
  - (j) *Puerria lobata*, commonly known as kudzuvine.
  - (k) *Sorghum bicolor* cv. *Drummondii*, commonly known as shattercane.
  - (l) *Heracleum mantegazzianum*, commonly known as Giant Hogweed.
  - (m) *Galega officinalis*, commonly known as Goatsrue.
3. Recreational open space areas not existing as forest or proposed as natural areas (e.g. wetland) shall be established in meadow, turf grass, or lawn; or established as forest. Open space areas to be dedicated to the Township and to remain "natural" which are fallow field/meadow, shall be planted with native tree species to establish forest.
- (a) A planting plan which identifies tree species, genus, size, and spacing; and ground cover/preparation shall be submitted with the preliminary plan application and is subject to approval by the Township.
  - (b) The planting plan shall, at a minimum, provide for the installation of one tree per 100 square feet of reforestation area. Trees shall have a minimum height of two feet at the time of installation. Bare root plants shall be planted between October 15 and December 1. Potted plants shall be planted between March 15 and May 1. Trees shall be fertilized, mulched, and staked and, protected from deer browsing. Species shall be native hardwoods.

(c) Township-owned open space may be designated and remain in agricultural use pursuant to Zoning Ordinance requirements where permitted by the Board of Supervisors.

4. Prior to seeding open space areas, a soil test must be conducted by a soil testing laboratory and the soils amended to achieve pH and NPK (Nitrogen, Phosphorous, and Potash) levels as recommended for the proposed seeding. At time of dedication, all open land areas must have at least 90% cover with appropriate grasses or other species and be free of noxious weeds as defined by the Commonwealth of Pennsylvania.
5. Open space reforestation plantings which do not survive, exhibit poor growth habits, are diseased, are missing, or are damaged by deer within five (5) years from the date of acceptance by the Township, shall be replaced in kind by the developer.
6. Any plant material which does not survive, exhibits poor growth habits, or is damaged by deer or natural causes within five (5) years following installation, shall be replaced by the developer within six (6) months following notification by the Township.
7. Financial security shall be posted with the Township in an amount equal to the estimated cost of the trees and plantings to be released five (5) years from Township acceptance of the installation or reinstallation of replacement trees in accordance with Section 140-34.E.6 above.

F. Protection of Existing Plant Material:

1. All subdivisions and land developments shall be laid out in such a manner so as to preserve healthy trees and shrubs on the site.
2. No grading, construction activity, or storage of topsoil or materials shall occur within a tree protection zone (TPZ) measured 15 feet from the trunk of a tree to be retained, or the distance from the trunk to the dripline, whichever is greater. No equipment may be driven over this area and no building materials are to be stacked against the trees or within the area of this buffer. Prior to construction, the TPZ shall be delineated by the following methods:
  - (a) The TPZ that is delineated on the site prior to construction shall conform to the approved development plans;
  - (b) All trees scheduled to remain shall be marked; where groups of trees exist, only the trees on the edge need to be marked;
  - (c) A 48 inch high plastic snow fence (tree protection fence) mounted on steel posts, located 8 feet on center, or other delineation approved by the Township, shall be placed along the boundary of the TPZ;
  - (d) When the tree protection fence has been installed, it shall be inspected and approved by the Township prior to clearing and further construction;



- (e) Fencing along the tree protection zone shall be maintained until all work/construction has been completed; any damaged protective fence shall be replaced and repaired immediately;
  - (f) Trees being removed shall not be felled, pushed, or pulled into a TPZ or any area where vegetation is to be retained.
3. Prior to the commencement of construction on any lot, and as prerequisite for the issuance of a building permit for a building within a major subdivision or land development, the applicant shall mark the tree protection zone boundary with four (4) feet high orange snow fence or three (3) feet high orange super silt fence. On notification that the marking is completed, the Township shall conduct an inspection to ensure that field conditions represent conditions presented on the plan. A reinspection of the site shall occur once notified of the completion of site work. The reinspection will verify the number of dead or dying trees (if any) in the Tree Protection Zone.
  4. During construction on any site, the tree protection fence shall be maintained to insure that there is no encroachment within the area of their dripline by changing grade, trenching, stockpiling of building materials or topsoil, or the compaction of the soil and roots by any motor vehicle unless the following regulations are met:
    - (a) The grade of land within the entire area of dripline shall not be raised more than 6" unless tree wells are constructed around each trunk or group of trunks and aeration pipes are extended out to the edge of the dripline. Any increase in grade shall consist of hand placed, uncompacted topsoil only.
    - (b) Tree wells are to be constructed of uncemented stone, or any other suitable material. Such walls shall be a minimum in one (1) foot in diameter for each inch in caliper measured twelve (12) inches above natural ground level.
    - (c) Retaining walls are to be constructed around each tree or group of trees immediately after any grade is lowered within the area of the dripline. This retaining wall is to be constructed of 8" x 8" pressure treated landscape ties, uncemented stone, or any other suitable material. Retaining walls must be designed and constructed to withstand overturning and frost heave.
  5. If any plant material is to be moved, it must be done in accordance with specifications set forth by the American Association of Nurserymen.
  6. All diseased or dead trees shall be promptly removed from the site. All trees to be preserved shall be pruned when necessary to remove dead limbs.
  7. No tree is to support any scaffolding, signs, temporary utilities, surveying spikes, or any other device.

8. Topsoil stockpiles, shall be located outside the tree protection zone or a minimum of fifteen (15) whichever is greater from any tree designated to remain.
9. Those trees whose removal will damage other trees which are to remain must be removed by hand. The resulting stumps must be carefully removed to minimize damage to roots and trunks of other trees.
10. Trees Damaged During Construction.
  - (a) Tree trunks and exposed roots damaged during construction shall be protected from further damage. Damaged branches shall be pruned according to Tree Care Industry Association (formally National Arborist Association) standards. All cuts shall be made sufficiently close to the trunk or parent limb but without cutting into the branch collar of leaving a protruding stub. All necessary pruning cuts must be made to prevent bark from being torn from the tree and to facilitate rapid healing.
  - (b) All trees which have been disturbed or have experienced damage to their roots or branches shall be fertilized in early fall or mid-spring. Fertilizer grade shall have approximately 3 parts nitrogen to 1 part phosphorus and potassium (3-1-1 ratio). Fertilizer shall be broadcast over the soil surface in an area twice the size of the tree protection zone at a rate of one (1) pound of nitrogen per 1000 square feet.
  - (c) Trees proposed to remain on a subdivision or land development plan which die or are so severely damaged during construction to require removal as determined by the Township shall be replaced pursuant to Section 140-37.G. of this Ordinance.
11. Stumps, branches and other wood debris shall not be buried on site. Where trees are removed outside of an area to be excavated, it is preferred that stumps be removed by grinding to a point six (6) inches below existing grade.

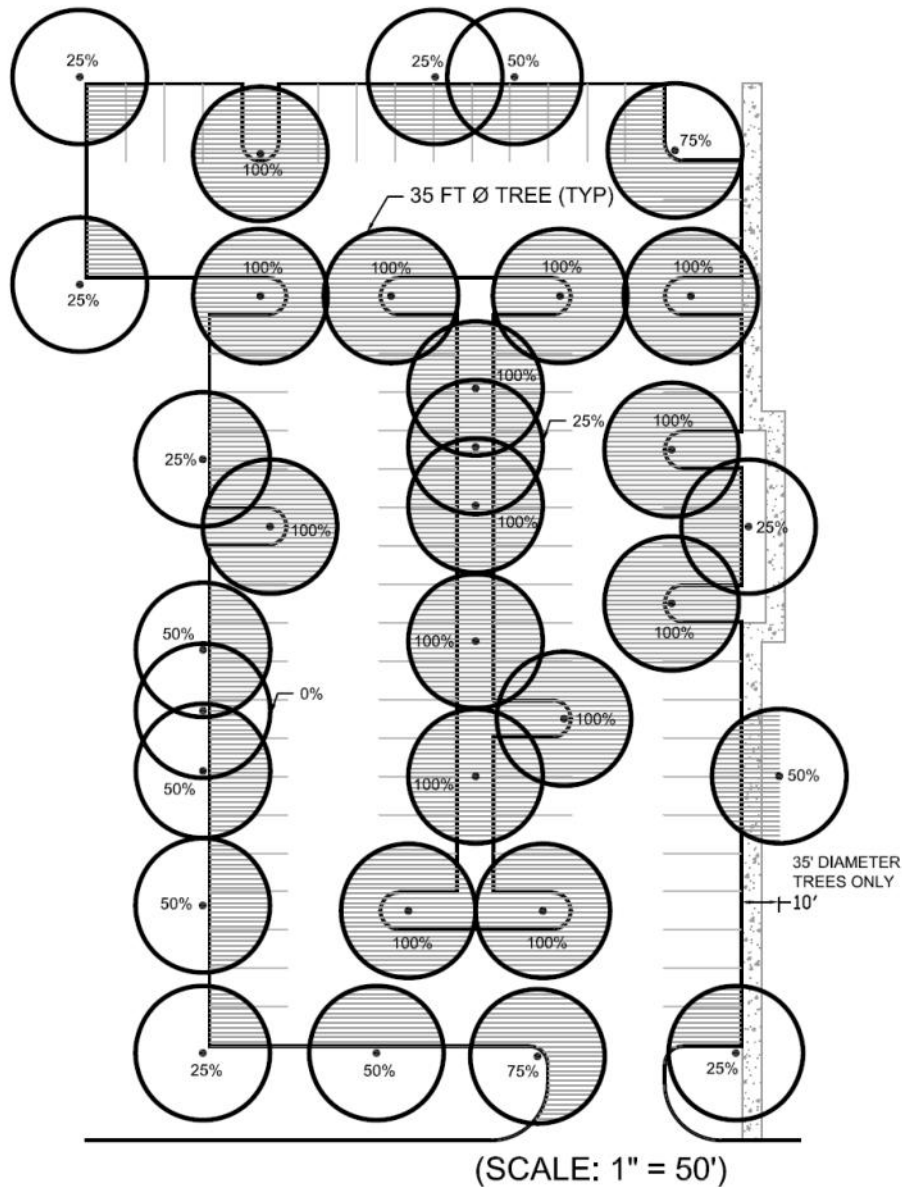
G. Replacement Trees/Reforestation.

Trees with a diameter of ten (10) inches or more which are to be removed or destroyed during any stage of development, grading and/or construction within a subdivision or land development, shall be replaced with a tree or trees of the type identified in Appendix K, Medium to Large Deciduous Trees, Small Deciduous Trees, or Evergreen Trees. However, removal of trees on a site shall not exceed the maximum permitted pursuant to Natural Resource Protection Standards of Section 160-28, Environmental Protection Standards, of the Zoning Ordinance. Replacement trees shall meet the following size limitations:

1. Trees with a diameter of ten (10) inches or more, but less than eighteen (18) inches which are removed, shall each be replaced with a tree of like caliper or no less than four (4) trees measuring two and one-half (2 ½) inches to three (3) inches in diameter.
2. Trees with a diameter of eighteen (18) inches or more, but less than thirty (30) inches which are removed, shall each be replaced with no less than seven (7) trees measuring two and one-half (2 ½) inches to three (3) inches in diameter.
3. Trees with a diameter of thirty (30) inches or more which are removed, shall each be replaced with no less than ten (10) trees measuring two and one-half (2 ½) inches to three (3) inches in diameter.
4. All replacement trees shall be measured at a height of four (4) feet above the finished grade level. Replacement trees shall be provided in addition to, not in place of, required buffers, street trees, trees in parking lots, or trees planted on single-family lots or common open space.
5. Where sufficient replacement trees of the required caliper size are not available or smaller caliper trees would have a greater survivability rate due to the planting environment, the Board of Supervisors may authorize smaller caliper replacement trees provided that the total caliper inches to be planted is comparable to the requirements set forth above.
6. Where development takes place on fully-wooded lots, replacement trees or their equivalent may be planted as follows:
  - (a) The applicant shall enhance existing wooded areas through planting of shade tolerant and deer resistant understory trees, shrubs, and ground cover; or
  - (b) In order to mitigate the impact of stormwater runoff either on site or upon adjacent properties, the applicant shall plant riparian buffers in areas designated by the Township, provided that the Township secures the necessary permission if the riparian buffer areas are on private property; or
  - (c) The Township may accept designated off-site areas or other riparian buffer areas in need of planting; or
  - (d) The Township may accept a fee-in-lieu of the required replacement tree plantings which shall be calculated in a manner acceptable to the Township.
7. Where replacement trees are to be planted on privately owned off-site land pursuant to Section 140-37.G.6, a conservation easement must be recorded at the Bucks County Courthouse in a manner acceptable to the Township to guarantee preservation of the plant material.

**Article III. Appendix C Nonresidential parking Lots Detail** is revised to Parking Lot Tree Coverage as follows:

# APPENDIX C



## GENERAL NOTES:

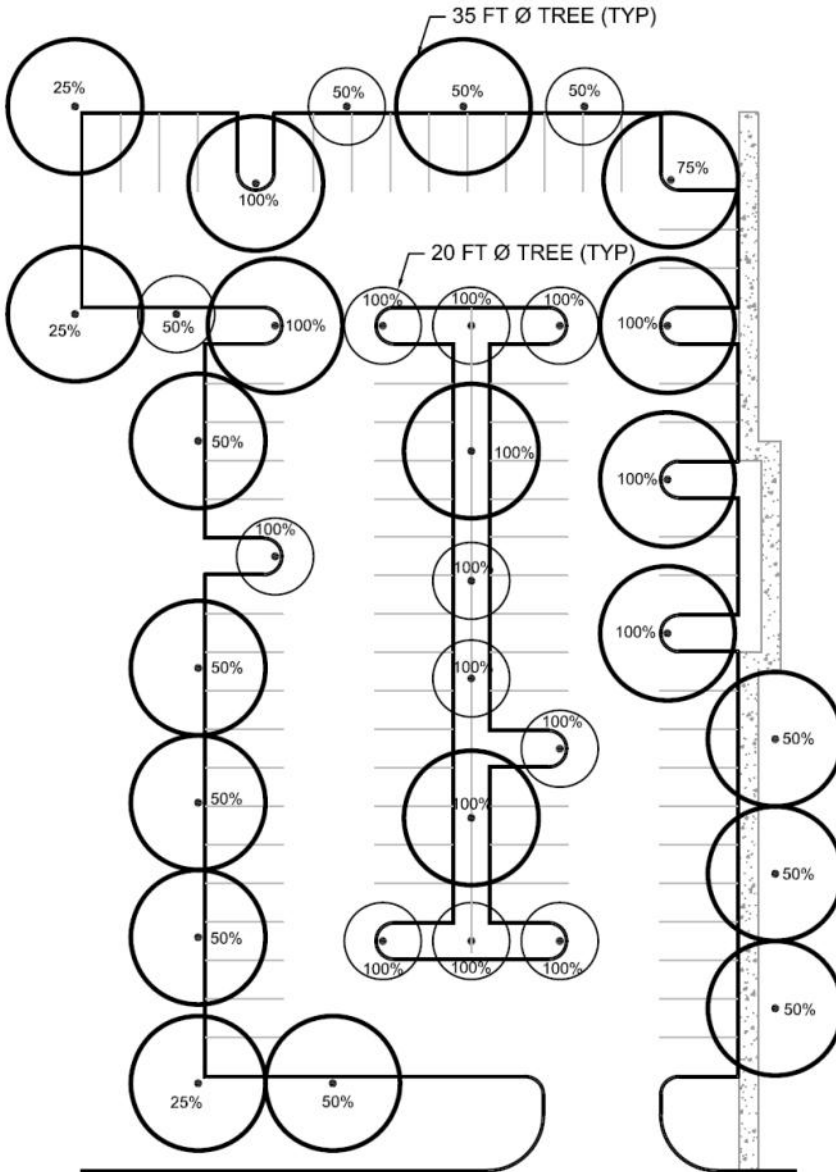
1. THIS DIAGRAM IS INTENDED TO REFLECT THE MANNER IN WHICH SHADE IS CREDITED. IT IS NOT AN ILLUSTRATION OF 50% COVERAGE. (SHADE COVERAGE SHOWN IS 64%)
2. TREES MAY RECEIVE 25%, 50%, 75% OR 100% CREDIT AS SHOWN.
3. SHADE OVERLAP IS NOT COUNTED TWICE.
4. TREES MUST BE 2 FT MINIMUM BEHIND FACE OF CURB OR ASPHALT EDGE (WHERE NO CURB IS PRESENT).
5. WHEN A SIDEWALK IS PRESENT, A 35' TREE PLACED 10 FT BEHIND FACE OF CURB MAY PROVIDE UP TO 50% SHADING.

## PARKING LOT TREE COVERAGE

### EXHIBIT A - SHADE DIAGRAM

C-1

# APPENDIX C



(SCALE: 1" = 50')

## LANDSCAPE SCHEDULE:

### SMALL TREES (20 FT Ø CROWN)

0	TREES @ 25% SHADING (79 SQ.FT. EA.)
3	TREES @ 50% SHADING (157 SQ.FT. EA.)
0	TREES @ 75% SHADING (236 SQ.FT. EA.)
10	TREES @ 100% SHADING (314 SQ.FT. EA.)

### MEDIUM TO LARGE TREES (35 FT Ø CROWN)

3	TREES @ 25% SHADING (240 SQ.FT. EA.)
9	TREES @ 50% SHADING (481 SQ.FT. EA.)
1	TREES @ 75% SHADING (722 SQ.FT. EA.)
7	TREES @ 100% SHADING (962 SQ.FT. EA.)

## COVERAGE CALCULATION

TOTAL TREE SHADE =	16,116 SQ.FT.
TOTAL PAVED AREA =	32,232 SQ.FT.
PERCENT OF SHADE COVERAGE =	50%

### GENERAL NOTES:

1. 24 FT MINIMUM AISLE WIDTH.
2. 10' x 20' MINIMUM PARKING STALL DIMENSION.
3. TREES MUST BE 2 FT MINIMUM BEHIND FACE OF CURB OR ASPHALT EDGE (WHERE NO CURB IS PRESENT).
4. WHEN A SIDEWALK IS PRESENT, A 35' TREE PLACED 10 FT BEHIND FACE OF CURB MAY PROVIDE UP TO 50% SHADING.

## PARKING LOT TREE COVERAGE

EXHIBIT B - 50% COVERAGE

C-2

Article IV. Appendix K. Plant Materials List is added as follows:

**APPENDIX K  
Plant Materials List**

**MEDIUM TO LARGE DECIDUOUS TREES<sup>(1)</sup>**

**(Three (3) inches minimum trunk diameter at installation)**

Botanical Name	Common Name	Mature Height (FT)	Street Tree Use	Comments
Acer nigrum	Black maple	50-60	Y	
Acer rubrum	Red maple	40-60	Y	
Acer saccharinum	Silver maple	80-100	N	
Acer saccharum	Sugar maple	60-75	N	
Aesculus hippocastanum	Horsechestnut	60-70	N	Native species only
Aesculus x carnea	Red Horsechestnut	35-50	N	Hybrid (A.pavia & A. hippocastanum)
Betula alleghaniensis	Yellow birch	60-80	N	
Betula lenta	Sweet birch	60-80	N	
Betula nigra	River birch	45-55	N	
Betula populifolia	Gray birch	40-50	N	
Carya tomentosa	Mockernut hickory	50-70	N	
Carya cordiformis	Bitternut hickory	50-70	N	
Carya glabra	Pignut hickory	50-70	N	
Carya ovata	Shagbark hickory	50-70	N	
Cladrastis kentukea	American Yellowwood	30-50	Y	
Fagus grandifolia	American beech	50-70	N	
Ginkgo biloba	Ginkgo	50-70	Y	Use male only, Not native
Gleditsia tricanthos	Honeylocust	40-60	Y	Thornless variety only (i.e. v. Inermis)
Gymnocladus dioica	Kentucky coffeetree	50-60	Y	Not native to area (use male only)
Juglans nigra	Black walnut	50-70	N	
Larix laricina	Eastern larch (Tamarack)	30-50	N	Native only in central PA
Liquidambar Styraciflua <sup>(2)</sup>	Sweet gum	50-75	Y	Refer foot note <sup>(2)</sup>
Liriodendron tulipifera	Tulip tree	75-100	N	
Magnolia acuminata	Cucumbertree	50-70	N	
Metasequoia glyptostroboides	Dawn redwood	65-85	N	Not native
Nyssa sylvatica	Black gum	40-70	N	
Ostrya virginiana	American hophornbeam	30-40	Y	
Platanus occidentalis	American sycamore	75-100	N	
Platanus x acerifolia	London planetree	70-80	Y	Hybrid (P.orientalis & P.occidentalis), Not native
Populus deltoides	Eastern cottonwood	75-100	N	
Populus tremuloides	Quaking aspen	40-60	N	

**MEDIUM TO LARGE DECIDUOUS TREES<sup>(1)</sup> (cont.)**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Mature Height (FT)</b>	<b>Street Tree Use</b>	<b>Comments</b>
Prunus serotina	Black cherry	50-80	N	
Quercus acutissima	Sawtooth oak	40-50	N	
Quercus alba	White oak	50-100	N	
Quercus bicolor	Swamp white oak	60-80	N	
Quercus coccinea	Scarlet oak	70-90	Y	
Quercus ilicifolia	Bear oak	60-80	N	
Quercus imbricaria	Shingle oak	40-65	N	
Quercus macrocarpa	Bur oak	70-90	Y	
Quercus montana	Chestnut oak	40-75	N	
Quercus muehlenbergii	Chinkapin oak	60-80	Y	
Quercus palustris <sup>(3)</sup>	Pin oak	60-75	N	Refer foot note <sup>(3)</sup>
Quercus phellos	Willow oak	55-75	N	
Quercus robur	English oak	60-80	Y	
Quercus rubra	Red oak	60-80	Y	
Quercus shumardii	Shumard oak	60-80	Y	
Quercus velutina	Black oak	60-80	Y	
Salix nigra	Black willow	60-80	N	
Sassafras albidum	Sassafras	30-50	N	
Taxodium distichum	Bald cypress	60-80	N	Not native to area
Tilia americana	Basswood (American linden)	50-70	Y	
Tilia cordata	Littleleaf linden	60-80	Y	
Tilia tomentosa	Silver linden	50-70	Y	
Ulmus Americana (disease resistant varieties)	American elm	70-90	Y	Disease resistant varieties only
Ulmus rubra	Slippery elm	45-55	N	
Zelkova serrata	Japanese zelkova	60-70	Y	Not native

<sup>(1)</sup> General notes:

a. Medium to large deciduous trees shall not be utilized where potential conflict may exist with overhead electric facilities.

b. Trees identified with "Y" within the street tree use column may be utilized as street trees where there is no potential conflict with overhead electric facilities.

<sup>(2)</sup> Only seedless cultivars permitted when utilized as a street tree or planted adjacent to parking lots, sidewalks, pedestrian paths and drainage structures.

<sup>(3)</sup> Quercus palustris (pin oak) has drooping branches and should not be installed adjacent to parking lots, sidewalks, or pedestrian paths unless the cultivar "Green pillar" is planted.

**Appendix K  
Plant Materials List**

**SMALL DECIDUOUS TREES <sup>(1)</sup>**

**(Two and one half (2 1/2) inches minimum caliper at installation)**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Mature Height (FT)</b>	<b>Street Tree Use</b>	<b>Comments</b>
Acer buergeranum	Trident Maple	20-30	Y	Not native
Acer ginnala	Amur maple	15-20	Y	Not native
Acer griseum	Paperbark maple	25-35	Y	Not native
Acer negundo	Box elder	30-40	N	
Acer tataricum	Tatarian maple	15-25	N	Not native
Alnus serrulata	Smooth alder	12-20	N	
Amelanchier (species & varieties)	Serviceberry	15-30	Y	Use tree form
Asima triloba	Pawpaw	6-30	N	
Capinus caroliniana	American hornbeam	20-35	Y	
Carpinus betulus	European hornbeam	35-40	N	Not native
Castanea pumila	Allegheny chinkapin	20-25	N	
Celtis occidentalis	Common hackberry	25-30	N	
Cercis canadensis	Eastern redbud	25-30	Y	
Chionanthur virginicus	White fringetree	15-25	N	
Cornus alternifolia	Pagoda dogwood	20-30	N	
Cornus florida	Flowering dogwood	20-30	N	
Cornus kousa	Kousa dogwood	20-30	N	Use tree form, Not native
Cornus mas	Cornelia dogwood	20-30	N	Not native
Cornus racemosa	Gray dogwood	20-30	N	
Crataegus viridis	Green hawthorn	20-30	N	Use tree form
Crataegus crus-galli	Cockspur hawthorn (thornless)	15-20	N	Use tree form (Thornless variety only)
Crataegus laevigata	English hawthorn	15-20	N	Use tree form
Crataegus phaenopyrum	Washington hawthorn (thornless)	20-30	N	Use tree form
Crataegus punctata	Dotted hawthorn	20-25	Y	Use tree form
Diospyros virginiana	Common persimmon	30-40	Y	
Hamamelis virginiana	Witch hazel	15-25	N	
Magnolia stellata	Star magnolia	10-20	N	Use tree form, Not native

**SMALL DECIDUOUS TREES <sup>(1)</sup> (cont.)**



<b>Botanical Name</b>	<b>Common Name</b>	<b>Mature Height (FT)</b>	<b>Street Tree Use</b>	<b>Comments</b>
Magnolia virginiana	Sweetbay magnolia	15-25	Y	Use tree form
Malus (species & varieties) <sup>(2)</sup>	Flowering crabapple	15-30	Y	Disease resistant cultivars only. Refer footnote. <sup>(2)</sup>
Prunus okame	Okame cherry	20-25	Y	Use tree form, Not native
Prunus pensylvanica	Pin cherry	25-40	N	Use tree form
Prunus serrulata	Oriental cherry	20-25	N	Not native. Use tree form
Prunus virginiana	Choke cherry	20-30	Y	Use tree form
Syringa reticulata	Japanese tree lilac	20-30	Y	Not native. Use tree form.

<sup>(1)</sup> General notes:

- a. Small deciduous trees may be utilized for street tree installation only where medium to large trees may conflict with overhead electric facilities.
- b. Trees identified with "Y" within the street tree use column may be utilized as street trees.

<sup>(2)</sup> Malus (flowering crabapple) has fruit and should not be installed adjacent to parking lots, sidewalks, pedestrian paths, or drainage structures.

**Appendix K  
Plant Materials List**

**EVERGREEN TREES  
(Six (6) feet minimum height at installation)**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Mature Height (FT)</b>	<b>Street Tree Use</b>	<b>Comments</b>
Abies balsamea	Balsam fir	60-80	N	
Chamaecyparis thyoides	Atlantic white cedar	50-70	N	
Ilex opaca	American holly	30-40	N	
Juniperus virginiana	Eastern red cedar	30-60	N	
Picea abies	Norway spruce	60-80	N	Naturalized
Picea glauca	White spruce	40-60	N	
Picea omorika	Serbian spruce	50-60	N	Not native
Picea pungens	Blue spruce	50-75	N	Not native to area
Picea rubens	Red spruce	60-80	N	
Pinus echinata	Shortleaf pine	70-90	N	
Pinus resinosa	Red pine	70-90	N	
Pinus rigida	Pitch pine	40-60	N	
Pinus strobus	Eastern white pine	100-140	N	
Pinus virginiana	Virginia pine	30-50	N	
Pseudotsuga menziesli	Douglas fir	40-60	N	Not native to area
Thuja occidentalis	Eastern arborvitae	30-50	N	
Tsuga canadensis	Eastern hemlock	80-100	N	

**Appendix K**

## Plant Materials List

### NATIVE SHRUBS

(Three (3) feet minimum height at installation when used as buffer plantings)

Botanical Name	Common Name	Comments
<i>Alnus incana</i>	speckled alder, mountain alder	
<i>Alnus serrulata</i>	smooth alder	
<i>Amelanchier arborea</i>	downy serviceberry, shadbush, Juneberry	
<i>Aronia arbutifolia</i>	red chokeberry	
<i>Aronia melanocarpa</i>	black chokeberry	
<i>Castanea pumila</i>	chinuapin	
<i>Ceanothus americanus</i>	New Jersey tea, red root	
<i>Cephalantus occidentalis</i>	buttonbush	
<i>Clethra alnifolia</i>	sweet pepper bush	
<i>Comptonia peregrina</i>	sweet fern	
<i>Cornus alternifolia</i>	pagoda dogwood	
<i>Cornus amomum</i>	silky dogwood	
<i>Cornus racemosa</i>	gray dogwood	
<i>Cornus sericea</i>	red-twig dogwood	
<i>Corylus americana</i>	American hazelnut	
<i>Corylus cornuta</i>	beaked hazelnut	
<i>Diervilla lonicera</i>	bush honeysuckle	
<i>Dirca palustris</i>	leatherwood	
<i>Epigae repens</i>	trailing arbutus	Evergreen
<i>Euonymus americana</i>	strawberry bush, brook euonymus	
<i>Gaultheria procumbens</i>	wintergreen, checkerberry	Evergreen
<i>Hamamelis virginiana</i>	Witch Hazel	
<i>Hydrangea arborescens</i>	wild hydrangea	
<i>Hypericum hypericoides</i> ssp. <i>Hypericoides</i>	St. Andrew's cross	
<i>Hypericum prolificum</i>	shrubby St. John's wart	
<i>Ilex glabra</i>	Inkberry	
<i>Ilex verticillata</i>	winterberry	
<i>Kalmia angustifolia</i>	sheep laurel	Evergreen
<i>Kalmia latifolia</i>	mountain laurel	Evergreen
<i>Lindera benzoin</i>	spicebush	
<i>Lyonia ligustrina</i>	male-berry	
<i>Myrica Pensylvanica</i>	Northern bayberry	
<i>Physocarpus opulifolius</i>	ninebark	Not Diablo variety
<i>Prunus virginiana</i>	chokecherry	

### NATIVE SHRUBS (cont.)

Botanical Name	Common Name	Comments
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Rhododendron arborescens	smooth azalea	
Rhododendron canadense	rhodora	
Rhododendron maximum	rosebay, great laurel	Evergreen
Rhododendron periclymenoides	pinxterbloom azalea	
Rhododendron prinophyllum	roseshell azalea	
Rhododendron viscosum	swamp azalea	
Rhus aromatica	fragrant sumac	
Rhus copallinum	dwarf sumac	
Rhus glabra	smooth sumac	
Rhus hirta	staghorn sumac	
Ribes cynosbati	prickly gooseberry	
Rosa blanda	smooth rose	
Rosa carolina	Carolina rose	
Rosa palustris	Swamp rose	
Rubus alleghenensis	Blackberry	
Rubus idaeus ssp.strigosus	red raspberry	
Rubus occidentalis	black raspberry	
Rubus odoratus	thimbleberry	
Salix bebbiana	Bebb willow, long-beaked willow	
Salix discolor	pussy willow	
Sambucus canadensis	elderberry, red-berried elder	
Spiraea alba	meadow sweet	
Spiraea tomentosa	steeplebush	
Staphylea trifolia	bladdernut	
Symphoricarpos albus	snowberry	
Taxus canadensis	Canada yew	Evergreen
Vaccinium aagustifolium	low-bush blueberry	
Vaccinium corymbosom	highbush blueberry	
Viburnum acerifolium	maple leaf viburnum	
Viburnum dentatum	southern arrowwood	
Viburnum lentago	black haw, nannyberry	
Viburnum nudum var. cassindoides	wild raisin	
Viburnum prunifolium	black haw, nanny berry	
Viburnum regonitum	Northern arrowwood	
Virurnum trilobum	highbush cranberry	

**Article V Repealer**

Any Ordinance or Ordinance provision of the municipality inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

**Article VI Severability**

Should any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

ENACTED and ORDAINED at a regular meeting of the Hilltown Township Board of Supervisors on the \_\_\_\_ day of \_\_\_\_\_, 2011. This Ordinance shall take effect in five (5) days from the date of adoption.

Hilltown Township Board of Supervisors

\_\_\_\_\_  
John B. McIlhinney, Chairman

\_\_\_\_\_  
Barbara Salvadore, Vice Chairperson

\_\_\_\_\_  
Jim Groff, Supervisor