**Marshall Township Ordinance Approved Plant List**

**RECOMMENDED TREES**

These are required species for tree plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

| Common Name | Botanical Name | Mature Height (ft) | Mature Width (ft) | Native | Shade Tree | Large Street Tree | Small Street Tree* | Evergreen Tree | Parking Lot Trees | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Japanese Maple | *Acer palmatum* | 15-25' | 10-25' | | | | X | | | Colorful leaves, fall color |
| Red Maple | *Acer rubrum* | 40-60' | 30-50' | X | X | X | | | X | Fall color |
| Silver Maple | *Acer saccharinum* | 50-80' | 35-70' | X | X | X | | | | Fall color |
| Sugar Maple | *Acer saccharum* | 40-80' | 30-60' | X | X | | | | | Fall color |
| Freeman Maple | *Acer x freemanii* | 50-70' | 10-15' | | X | X | | | X | Red maple and silver maple hybrid |
| Allegheny Serviceberry | *Amelanchier laevis* | 15-25' | 15-20' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Eastern Serviceberry | *Amelanchier canadensis* | 15-25' | 15-20' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Apple Serviceberry | *Amelanchier x grandifolia* | 15-25' | 15-25' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Gray Birch | *Betula populifolia* | 20-30' | 10-20' | X | | | X | | | Winter interest |
| River Birch | *Betula nigra* | 30-70' | 40-60' | X | X | | | | | Fall color, can tolerate wet soils |
| American Hornbeam | *Carpinus caroliniana* | 20-30' | 20-35' | X | | | X | | X | Fall color |
| Pignut Hickory | *Carya glabra* | 60-80' | 25-40' | X | X | X | | | | Wildlife value, fall color |
| Shagbark Hickory | *Carya ovata* | 70-90' | 50-70' | X | X | | | | | Wildlife value |
| Mockernut Hickory | *Carya tomentosa* | 60-80' | 40-60' | X | X | | | | | Wildlife value, fall color |
| Hackberry | *Celtis occidentalis* | 40-100' | 40-60' | X | X | X | | | X | Wildlife value |
| Eastern Redbud | *Cercis canadensis* | 20-30' | 25-35' | X | | | X | | X | Spring flower |
| White Fringetree | *Chionanthus virginicus* | 12-30' | 12-20' | X | | | X | | | Spring flower |
| Yellowwood | *Cladrastis kentukea* | 30-45' | 40-45' | X | X | | | | | Wildlife value, fall color |
| Flowering Dogwood | *Cornus florida (Benthamidia florida)* | 15-25' | 15-30' | X | | | X | | | Spring flower, fall color, prefers partial shade |
| Thornless Hawthorn | *Crataegus crus-galli inermis* | 20-30' | 20-35' | X | | | | | X | Thornless variety, spring flower, fall color, winter fruit, wildlife value |
| Ginkgo | *Ginkgo biloba* | 50-80' | 30-40' | | X | X | | | X | Fall color, only plant male varieties like Magyar |
| Honeylocust | *Gleditsia triacanthos inermis* | 60-80' | 60-80' | X | X | X | | | X | Thornless & fruitless varieties like Skyline, Sunburst, Harve |
| Kentucky Coffeetree | *Gymnocladus dioicus* | 60-80' | 40-55' | X | X | X | | | | Male varieties more desirable due to seed pods |
| Carolina Silverbell | *Halesia carolina* | 10-30' | 25-35' | X | | | X | | | Spring flower, interesting seed pod, fall color |
| American Holly | *Ilex opaca* | 15-30' | 10-20' | X | | | | X | | Winter interest |
| Eastern Red Cedar | *Juniperus virginiana* | 30-40' | 10-20' | X | | | | X | X | Winter interest |
| American Sweetgum | *Liquidambar styraciflua* | 60-80' | 40-50' | X | X | | | | | Fall color |
| Tulip Tree | *Liriodendron tulipifera* | 60-90' | 30-50' | X | X | X | | | | Spring/summer flowers, fall color |
| Cucumbertree | *Magnolia acuminata* | 40-70' | 20-35' | X | X | | | | | Spring/summer flowers, fall color |

| RECOMMENDED TREES (cont.) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Native** | **Shade Tree** | **Large Street Tree** | **Small Street Tree*** | **Evergreen Tree** | **Parking Lot Trees** | **Notes** |
| Star Magnolia | *Magnolia stellata* | 15-20' | 10-15' | | | | X | | | Spring flower |
| Sweetbay Magnolia | *Magnolia virginiana* | 10-30' | 10-35' | X | | | X | | X | Spring/summer flower, semi-evergreen |
| Crabapple | *Malus spp.* | varies | varies | | | | X | | X | Cultivars: Adirondack, Cardinal, Prairie Fire, Tina, Sargent |
| Blackgum | *Nyssa sylvatica* | 30-50' | 20-30' | X | X | X | | | | Wildlife value, fall color |
| American Hophornbeam | *Ostrya virginiana* | 20-30' | 15-30' | X | X | | X | | X | Wildlife value |
| Norway Spruce | *Picea abies* | 40-60' | 25-30' | | | | | X | | Winter interest |
| Colorado Blue Spruce | *Picea pungens* | 30-60' | 10-20' | | | | | X | | Native to western United States, winter interest |
| White Spruce | *Picea glauca* | 40-60' | 10-20' | X | | | | X | | Winter interest |
| Eastern White Pine | *Pinus strobus* | 50-80' | 20-40' | X | | | | X | | Winter interest |
| London Planetree | *Platanus x acerifolia* | 75-100' | 75-100' | | X | | | | | Wildlife value |
| American Sycamore | *Platanus occidentalis* | 70-100' | 60-75' | X | X | | | | | Winter interest |
| Sargent Cherry | *Prunus sargentii* | 20-30' | 20-30' | | X | | X | | | Spring flower, fall color, wildlife value |
| Flowering Cherry | *Prunus x yedoensis* | 30-40' | 20-50' | | X | | X | | | Spring flower, fall color, wildlife value |
| White Oak | *Quercus alba* | 50-80' | 50-80' | X | X | X | | | | Wildlife value, fall color |
| Swamp White Oak | *Quercus bicolor* | 50-60' | 50-60' | X | X | X | | | X | Wildlife value, fall color |
| Scarlet Oak/Black Oak | *Quercus coccinea* | 50-80' | 45-60' | X | X | X | | | X | Wildlife value, fall color |
| Shingle Oak/Laurel Oak | *Quercus imbricaria* | 50-70' | 50-60' | X | X | X | | | | Wildlife value, fall color |
| Bur Oak | *Quercus macrocarpa* | 60-80' | 60-80' | X | X | | | | | Wildlife value, fall color, spring plant only |
| Chinkapin Oak | *Quercus muehlenbergii* | 40-60' | 50-70' | X | X | | | | X | Wildlife value, fall color |
| Pin Oak | *Quercus palustris* | 50-70' | 40-60' | X | X | X | | | X | Wildlife value, fall color |
| Red Oak | *Quercus rubra* | 50-70' | 50-75' | X | X | | | | | Wildlife value, fall color |
| Bald Cypress | *Taxodium distichum* | 50-70' | 20-45' | X | X | | | | | Prefers wet soils |
| American Linden/Basswood | *Tilia americana* | 50-80' | 30-50' | X | X | X | | | | Fragrant flowers, wildlife value |
| Littleleaf Linden | *Tilia cordata* | 50-70' | 35-50' | X | X | X | | | X | Fragrant flowers, wildlife value |
| Giant Arbovitae/Western Redcedar | *Thuja plicata* | 40-60' | 12-18' | | | | | X | | Susceptible to deer damage |
| Arborvitae | *Thuja spp.* | varies | varies | | | | X | X | | Small tree varieties can be used in screening and as an evergreen street tree |
| Elm hybrids | *Ulmus* | 50-60' | 30-40' | | X | X | | | X | Dutch Elm Disease resistant; cultivars: Accolade, Frontier, Triumph |
| Blackhaw Viburnum | *Viburnum prunifolium* | 12-15' | 6-12' | X | | | X | | | Tree form, spring flower, fall color, winter fruit, wildlife value |
| Zelkova | *Zelkova serrata* | 50-80' | 50-80' | | X | X | | | X | Fall color |

* For the purposes of this ordinance, Small Street Trees are also referred to as Ornamental Trees for the Special Conservation Bufferyard.

**Marshall Township Ordinance Approved Plant List**

**RECOMMENDED SHRUBS**

These are suggested species for shrub plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

| Common Name | Botanical Name | Mature Height (ft) | Mature Width (ft) | Small Shrub (under 4') | Large Shrub (over 4') | Groundcover | Flower | Fruit | Fall Color | Deer Resistant | Salt Tolerance | Evergreen | Native | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bottlebrush Buckeye | *Aesculus parviflora* | 8-12' | 8-15' | | X | | X | X | X | X | | | X | Partial to full shade |
| Running Serviceberry | *Amelanchier stolonifera* | 4-5' | 4-5' | | X | | X | X | X | | | | X | Full sunto partial shade |
| Red Chokeberry | *Aronia arbutifolia* | 6-10' | 3-6' | | X | | X | X | X | X | X | | X | Full sun to partial shade |
| Black Chokeberry | *Aronia melanocarpa* | 3-6' | 3-6' | | X | | X | X | X | | X | | X | Full sun to partial shade |
| Lowscape Mound Black Chokeberry | *Aronia melanocarpa 'UCONNAM165'* | 1-2' | 3-4' | X | | | X | X | X | | X | | X | Full sun to partial shade |
| Ground Hog Black Chokeberry | *Aronia melanocarpa 'UCONNAM012'* | .75'-1' | 2-3' | X | | X | X | X | X | | X | | X | Full sun to partial shade |
| Green Gem Boxwood | *Buxus 'Green Gem'* | 3-4' | 3-4' | X | | | | | | X | | X | | Full sun to partial shade |
| Green Mound Boxwood | *Buxus 'Green Mound'* | 2-3' | 2-3' | X | | | | | | X | | X | | Full sun to partial shade |
| Green Mountain Boxwood | *Buxus 'Green Mountain'* | 3-5' | 2-3' | | X | | | | | X | | X | | Full sun to partial shade |
| Joy Boxwood | *Buxus sempervirens 'Joy'* | 3-6' | 3-5' | | X | | | | | X | | X | | Full sun to partial shade |
| American Beautyberry | *Callicarpa americana* | 3-6' | 3-6' | | X | | X | X | X | X | | | X | Full sun to partial shade |
| Carolina Allspice/Sweetshrub | *Calycanthus floridus* | 6-10' | 6-12' | | X | | X | | | X | | | X | Full sun to full shade |
| New Jersey Tea | *Ceanothus americanus* | 3-4' | 3-5' | X | | | X | | X | X | | | | Full sun to partial shade |
| Buttonbush | *Cephalanthus occidentalis* | 5-12' | 4-8' | | X | | X | X | | | | | | Full sun to partial shade |
| Summersweet | *Clethra alnifolia* | 3-8' | 4-6' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Crystalina Summersweet | *Clethra alnifolia 'Crystalina'* | 2-3' | 3-4' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Hummingbird Summersweet | *Clethra alnifolia 'Hummingbird'* | 2-4' | 3-5' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Ruby Spice Summersweet | *Clethra alnifolia 'Ruby Spice'* | 4-6' | 3-5' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Silky Dogwood | *Cornus amomum* | 6-12' | 6-12' | | X | | X | | X | | | | X | Full sun to full shade |
| Gray Dogwood | *Cornus racemosa* | 10-15' | 10-15' | | X | | X | | X | | | | X | Full sun to full shade |
| Red Twig Dogwood | *Cornus sericea* | 6-9' | 7-10' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Isanti Red Twig Dogwood | *Cornus sericea 'Isanti'* | 4-5' | 4-7' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Arctic Fire Red Twig Dogwood | *Cornus sericea 'Farrow'* | 3-4' | 3-4' | X | | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Yellow Twig Dogwood | *Cornus sericea 'Flaviramea'* | 5-6' | 5-6' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Northern Bush Honeysuckle | *Diervilla lonicera* | 2-3' | 2-4' | X | | | X | | X | | X | | X | Full sun to partial shade |
| Fothergilla | *Fothergilla major/latifolia* | 6-10' | 5-9' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Blue Mist Fothergilla | *Fothergilla 'Blue Mist'* | 2-3' | 2-3' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Blue Shadow Fothergilla | *Fothergilla 'Blue Shadow'* | 4-6' | 4-6' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Mt. Airy Fothergilla | *Fothergilla 'Mt. Airy'* | 3-5' | 3-5' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Ozark Witchhazel | *Hamamelis vernalis* | 6-10' | 8-15' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Common Witchhazel | *Hamamelis virginiana* | 15-20' | 15-20' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Smooth Hydrangea | *Hydrangea arborescens* | 3-5' | 3-5' | | X | | X | | | | X | | X | Full sun to partial shade |
| Incrediball Smooth Hydrangea | *Hydrangea arborescens 'Abetwo'* | 4-5' | 4-5' | | X | | X | | | | X | | X | Full sun to partial shade |

| RECOMMENDED SHRUBS (cont.) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Small Shrub (under 4')** | **Large Shrub (over 4')** | **Groundcover** | **Flower** | **Fruit** | **Fall Color** | **Deer Resistant** | **Salt Tolerance** | **Evergreen** | **Native** | **Notes** |
| Annabelle Smooth Hydrangea | *Hydrangea arborescens 'Annabelle'* | 3-5' | 4-6' | | **X** | | X | | | | X | | X | Full sun to partial shade |
| Invincibelle Wee White Hydrangea | *Hydrangea arborescens 'NCHA5'* | 1-2.5' | 2-3' | **X** | | | X | | | | X | | X | Full sun to partial shade |
| Invincibelle Spirit Hydrangea | *Hydrangea arborescens 'NCHA1'* | 3-4' | 3-4' | **X** | | | X | | | | X | | X | Full sun to partial shade |
| Oakleaf Hydrangea | *Hydrangea quercifolia* | 6-8' | 6-8' | | **X** | | X | | X | | X | | X | Full sun to partial shade |
| Snow Queen Oakleaf Hydrangea | *Hydrangea quercifolia 'Flemygea'* | 4-6' | 6-8' | | **X** | | X | | X | | X | | X | Full sun to partial shade |
| Pee Wee Oakleaf Hydrangea | *Hydrangea quercifolia 'Pee Wee'* | 3-4' | 2.5-3' | **X** | | | X | | X | | X | | X | Full sun to partial shade |
| Ruby Slippers Oakleaf Hydrangea | *Hydrangea quercifolia 'Ruby Slippers'* | 3-4' | 3-4' | **X** | | | X | | X | | X | | X | Full sun to partial shade |
| St.Johnswort | *Hypericum calycinum* | 1-1.5' | 1.5-2' | **X** | | **X** | X | X | | X | X | | | Semi-evergreen, full sun to partial shade |
| Kalm St.Johnswort | *Hypericum kalmianum* | 2-3' | 2-3' | **X** | | | X | X | | X | X | | X | Semi-evergreen, full sun to partial shade |
| Inkberry Holly | *Ilex glabra* | 5-8' | 5-8' | | **X** | | | X | | X | X | X | X | Full sun to partial shade |
| Compact Inkberry | *Ilex glabra 'Shamrock' or 'Compacta'* | 3-4' | 3-4' | **X** | | | | X | | X | X | X | X | Full sun to partial shade |
| Afterglow Winterberry Holly | *Ilex verticillata 'Afterglow'* | 3-6' | 3-6' | | **X** | | | X | X | X | X | | X | Female, winter interest, full sun to full shade, plant with male for berries (*Ilex verticillata 'Jim Dandy'*) |
| Red Sprite Winterberry Holly | *Ilex verticillata 'Nana'* | 2.5-3' | 2.5-3' | **X** | | | | X | X | X | X | | X | Female, winter interest, full sun to full shade, plant with male for berries (*Ilex verticillata 'Jim Dandy'*) |
| Winter Gold Winterberry Holly | *Ilex verticillata 'Winter Gold'* | 5-8' | 5-8' | | **X** | | | X | X | X | X | | X | Female, winter interest, full sun to full shade, plant with male for berries (*Ilex verticillata 'Southern Gentleman'*) |
| Virginia Sweetspire | *Itea virginica* | 3-5' | 3-5' | | **X** | | X | | X | X | X | | X | Full sun to partial shade |
| Henry's Garnet Virginia Sweetspire | *Itea virginica 'Henry's Garnet'* | 3-4' | 4-6' | **X** | | | X | | X | X | X | | X | Full sun to partial shade |
| Little Henry Virginia Sweetspire | *Itea virginica 'Sprich'* | 1.5-2' | 2-2.5' | **X** | | | X | | X | X | X | | X | Full sun to partial shade |
| Juniper | *Juniperus spp.* | varies | varies | **X** | **X** | **X** | | | | X | X | X | | Some are native, most are non-native, vary in size, mostly full sun to partial shade |
| Creeping Juniper | *Juniperus horizontalis* | 0.5-1.5' | 5-8' | **X** | | **X** | | | | X | X | X | X | Full sun |
| Wilton Creeping Juniper | *Juniperus horizontalis 'Wiltonii'* | 0.25-0.5' | 6-8' | **X** | | **X** | | | | X | X | X | X | Full sun |
| Sea Green Juniper | *Juniperus x pfitzeriana 'Sea Green'* | 4-6' | 6-8' | | **X** | | | | | X | X | X | | Full sun |
| Kallay's Compact Juniper | *Juniperus x pfitzeriana 'Kallay's Compact'* | 2-3' | 3-6' | **X** | | | | | | X | X | X | | Full sun |
| Green Mound Juniper | *Juniperus procumbens 'Green Mound'* | 0.5-0.75' | 4-6' | **X** | | **X** | | | | X | X | X | | Full sun |
| Blue Star Juniper | *Juniperus squamata 'Blue Star'* | 1-3' | 1-4' | **X** | | | | | | X | X | X | | Full sun |
| Grey Owl Juniper | *Juniperus virginiana 'Grey Owl'* | 2-3' | 4-6' | **X** | | | | | | X | X | X | X | Full sun |
| Mountain Laurel | *Kalmia latifolia* | 5-15' | 5-15' | | **X** | | X | | | | | X | X | Full sun to partial shade |
| Northern Spicebush | *Lindera benzoin* | 6-12' | 6-12' | | **X** | | X | X | X | X | X | | X | Partial shade |
| Northern Bayberry | *Myrica pensylvanica* | 5-10' | 5-10' | | **X** | | | X | | X | X | | X | Full sun to partial shade |
| Dwarf Northern Bayberry | *Myrica pensylvanica 'Bobbee'* | 5-6' | 6-8' | | **X** | | | X | | X | X | | X | Full sun to partial shade |
| Common Ninebark | *Physocarpus opulifolius* | 5-8' | 4-6' | | **X** | | X | X | X | | | | X | Winter interest, full sun to partial shade |

| RECOMMENDED SHRUBS (cont.) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Small Shrub (under 4')** | **Large Shrub (over 4')** | **Groundcover** | **Flower** | **Fruit** | **Fall Color** | **Deer Resistant** | **Salt Tolerance** | **Evergreen** | **Native** | **Notes** |
| Diabolo Ninebark | *Physocarpus opulifolius 'Diabolo'* | 4-8' | 4-8' | | **X** | | X | X | X | | | | X | Winter interest, full sun to partial shade |
| Amber Jubilee Ninebark | *Physocarpus opulifolius 'Jefam'* | 5-6' | 3-4' | | **X** | | X | X | X | | | | X | Winter interest, full sun to partial shade |
| Summer Wine Ninebark | *Physocarpus opulifolius 'Seward'* | 4-6' | 4-6' | | **X** | | X | X | X | | | | X | Winter interest, full sun to partial shade |
| Tiny Wine Ninebark | *Physocarpus opulifolius 'SMPOTW'* | 3-4' | 3-4' | **X** | | | X | X | X | | | | X | Winter interest, full sun to partial shade |
| Mugo Pine | *Pinus mugo var. pumilio* | 3-5' | 6-10' | | **X** | | | | | X | X | X | | Winter interest, use only dwarf Mugo Pine varieties, straight species gets large |
| Fragrant Sumac | *Rhus aromatica 'Gro-Low'* | 1.5-2' | 6-8' | **X** | | **X** | | X | X | X | X | | X | Full sun to partial shade |
| Smooth Sumac | *Rhus glabra* | 9-15' | 9-15' | | **X** | | X | X | X | | X | | X | Full sun to partial shade |
| Staghorn Sumac | *Rhus typhina* | 15-25' | 20-30' | | **X** | | X | X | X | | X | | X | Full sun |
| American Elderberry | *Sambucus canadensis* | 5-12' | 5-12' | | **X** | | X | X | X | | | | X | Full sun to partial shade |
| Common Snowberry | *Symphoricarpos albus* | 3-6' | 3-6' | | **X** | | X | X | | X | X | | X | Full sun to partial shade |
| Highbush Blueberry | *Vaccinium corymbosum* | 6-12' | 8-12' | | **X** | | X | X | X | | | | X | Full sun to partial shade |
| Aurora Highbush Blueberry | *Vaccinium corymbosum 'Aurora'* | 4-6' | 4-6' | | **X** | | X | X | X | | | | X | Full sun to partial shade |
| Northland Highbush Blueberry | *Vaccinium corymbosum 'Northland'* | 3-4' | 4-5' | **X** | | | X | X | X | | | | X | Full sun to partial shade |
| Bushel and Berry Highbush Blueberry | *Vaccinium corymbosum 'ZF06-043'* | 1.5-2' | 1.5-2' | **X** | | **X** | X | X | X | | | | X | Full sun to partial shade |
| Arrowwood Viburnum | *Viburnum dentatum* | 6-10' | 6-10' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Blue Muffin Arrowwood Viburnum | *Viburnum dentatum 'Christom'* | 3-5' | 3-4' | **X** | | | X | X | X | X | X | | X | Full sun to partial shade |
| Little Joe Arrowwood Viburnum | *Viburnum dentatum 'KLMseventeen'* | 4-5' | 4-5' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Autumn Jazz Arrowwood Viburnum | *Viburnum dentatum 'Ralph Senior'* | 6-10' | 6-10' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Nannyberry Viburnum | *Viburnum lentago* | 14-16' | 6-12' | | **X** | | X | X | X | X | | | X | Full sun to partial shade |
| Blackhaw Viburnum | *Viburnum prunifolium* | 12-15' | 6-12' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |

**Marshall Township Ordinance Approved Plant List**

**RECOMMENDED GROUND COVERS**

These are suggested species for ground cover plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

| Common Name | Botanical Name | Mature Height (ft) | Mature Width (ft) | Sun | Shade | Flower | Fall Color | Deer Resistant | Salt Tolerance | Evergreen | Native | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blue Ice Blue Star | *Amsonia tabernaemontana 'Blue Ice'* | 1-1.5' | 1-1.5' | X | X | X | X | X | X | | X | Drought tolerant |
| Mountain Rockcress | *Arabis alpina* | 0.5-1' | 1-2' | X | | X | | X | | | | Drought tolerant |
| Butterfly Weed | *Asclepias tuberosa* | 1-2' | 1-1.5' | X | | X | | X | X | | X | Drought tolerant |
| Blue Gramma | *Bouteloua gracilis* | 0.75-1.5' | 1.5-2' | X | | X | | X | | | X | Drought tolerant |
| Blue Green Sedge | *Carex flacca* | 0.5-1' | 1-1.5' | X | X | | | X | | | | Prefers moist soil |
| Pennsylvania Sedge | *Carex pensylvanica* | 0.5-1' | 0.5-1' | | X | | | X | | | X | Drought tolerant |
| Snow in Summer | *Cerastium tomentosum* | 0.5-1' | 0.75-1' | X | | X | | X | | | | Drought tolerant |
| Plumbago | *Cerastostigma plumbaginoides* | 0.75-1' | 1-1.5' | X | X | X | X | | X | | | Adaptable to range of soils |
| Goldenstar | *Chrysogonum virginianum* | 0.5-1' | 0.75-1.5' | | X | X | | | | | X | Prefers moist soil |
| Lanceleaf Coreopsis | *Coreopsis lanceolata* | 1-2' | 1-1.5' | X | | X | | X | X | | X | Drought tolerant |
| Hay-scented Fern | *Dennstaedtia punctilobula* | 1.5' | 2-3' | | X | | X | X | | | X | Adaptable to range of soils |
| Tufted Hair Grass | *Deschampsia cespitosa* | 1.5-2.5' | 1-2' | X | | X | | | | | | Prefers moist soil |
| Bishops Hat | *Epimedium grandiflorum* | 0.75-1' | 1-2' | | X | X | | X | X | | | Drought tolerant |
| Purple Lovegrass | *Eragrostis spectabilis* | 1-1.5' | 1-2' | X | | X | | X | | | X | Drought tolerant |
| Rozanne Cranesbill Geranium | *Geranium 'Gerwat'* | 1-1.5' | 1-2' | X | X | X | | X | X | | | |
| Reblooming Daylilies | *Hemerocalis spp.* | Varies | Varies | | | | | | | | | Happy Returns, Rosy Returns, Stella d'Oro, Ruby Stella, Pardon Me, Apricot Sprinkles, etc. |
| Candytuft | *Iberis sempervirens* | 0.5-1' | 0.5-1.5' | X | | X | | X | X | | | Drought tolerant |
| Allegheny Spurge | *Pachysandra procumbens* | 0.5-1' | 1-2' | | X | | | X | X | | X | Semi-evergreen, prefers moist soil |
| Little Spire Russian Sage | *Perovskia atriplicifolia 'Little Spire'* | 1.5-2' | 1.5-2' | X | | X | | X | X | | | Drought tolerant |
| Moss Phlox | *Phlox subulata* | 0.25-0.5' | 1-2' | X | | X | | X | | | X | Semi-evergreen, drought tolerant |
| White Stonecrop | *Sedum album* | 0.25-0.5' | 1-1.5' | X | | X | | X | | X | | Drought tolerant |
| Stonecrop | *Sedum rupestre* | 0.25-0.5' | 1-2' | X | | X | | X | | | | Drought tolerant |
| Stonecrops | *Sedum spp.* | Varies | Varies | | | | | | | | | |
| Three-Leaved Stonecrop | *Sedum ternatum* | 0.25-0.5' | 0.5-0.75' | X | X | X | | | | | X | Drought tolerant |
| Prairie Dropseed | *Sporobolus heterolepis 'Tara'* | 1.5-2.5' | 1.5-2.5' | X | | X | | X | X | | X | Drought tolerant |
| Crowns of Rays Goldenrod | *Solidago 'Crowns of Rays'* | 1.5-2' | 1-1.5' | X | | X | | X | | | X | Drought tolerant |
| Golden Fleece Goldenrod | *Solidago sphacelata 'Golden Fleece'* | 1-1.5' | 1-1.5' | X | | X | | X | | | X | Drought tolerant |
| Lambs Ear | *Stachys bysantina* | 0.75-1.5' | 1-1.5' | X | | X | | X | | | | Drought tolerant |
| Snow Flurry Aster | *Symphyotrichum ericoides 'Snow Flurry'* | 0.25-0.5' | 0.25-1' | X | | X | | X | X | | X | Drought tolerant |
| October Skies Aster | *Symphyotrichum oblongifolium 'October Skies'* | 1.5-2' | 1.5-2' | X | | X | | X | X | | X | Drought tolerant |
| Creeping Thyme | *Thymus praecox* | 0.25-0.5' | 0.25-0.5' | X | | X | | X | X | X | | Drought tolerant |
| Mother of Thyme | *Thymus serpyllum* | 0.25' | 0.25-1' | X | | X | | X | X | X | | Drought tolerant |

| RECOMMENDED GROUND COVERS (cont.) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Sun** | **Shade** | **Flower** | **Fall Color** | **Deer Resistant** | **Salt Tolerance** | **Evergreen** | **Native** | **Notes** |
| Foam Flower | *Tiarella cordifolia* | 0.75-1' | 1-2' | | X | X | X | X | | | X | Prefers moist soil |
| Prostrate Speedwell | *Veronica prostrata* | 0.5-0.75' | 0.5-1.5' | X | X | X | | X | X | | | |
| Barren Strawberry | *Waldsteinia fragarioides* | 0.25-.5' | 0.5-1' | X | X | X | | X | | | X | Adaptable to range of soils |

**Marshall Township Ordinance Approved Plant List**

**Erosion control**

| RECOMMENDED TREES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| These are suggested species for tree plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable. | | | | | | | | | | |
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Native** | **Shade Tree** | **Large Street Tree** | **Small Street Tree*** | **Evergreen Tree** | **Parking Lot Trees** | **Notes** |
| Allegheny Serviceberry | *Amelanchier laevis* | 15-25' | 15-20' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Eastern Serviceberry | *Amelanchier canadensis* | 15-25' | 15-20' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Apple Serviceberry | *Amelanchier x grandifolia* | 15-25' | 15-25' | X | | | X | | | Spring flower, fall color, winter fruit, wildlife value |
| Pignut Hickory | *Carya glabra* | 60-80' | 25-40' | X | X | X | | | | Wildlife value, fall color |
| Shagbark Hickory | *Carya ovata* | 70-90' | 50-70' | X | X | | | | | Wildlife value |
| Mockernut Hickory | *Carya tomentosa* | 60-80' | 40-60' | X | X | | | | | Wildlife value, fall color |
| Eastern Redbud | *Cercis canadensis* | 20-30' | 25-35' | X | | | X | | X | Spring flower |
| Eastern Red Cedar | *Juniperus virginiana* | 30-40' | 10-20' | X | | | | X | X | Winter interest |
| **RECOMMENDED TREES (cont.)** | | | | | | | | | | |
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Native** | **Shade Tree** | **Large Street Tree** | **Small Street Tree*** | **Evergreen Tree** | **Parking Lot Trees** | **Notes** |
| White Oak | *Quercus alba* | 50-80' | 50-80' | X | X | X | | | | Wildlife value, fall color |
| Swamp White Oak | *Quercus bicolor* | 50-60' | 50-60' | X | X | X | | | X | Wildlife value, fall color |
| Scarlet Oak/Black Oak | *Quercus coccinea* | 50-80' | 45-60' | X | X | X | | | X | Wildlife value, fall color |
| Shingle Oak/Laurel Oak | *Quercus imbricaria* | 50-70' | 50-60' | X | X | X | | | | Wildlife value, fall color |
| Bur Oak | *Quercus macrocarpa* | 60-80' | 60-80' | X | X | | | | | Wildlife value, fall color, spring plant only |
| Chinkapin Oak | *Quercus muehlenbergii* | 40-60' | 50-70' | X | X | | | | X | Wildlife value, fall color |
| Pin Oak | *Quercus palustris* | 50-70' | 40-60' | X | X | X | | | X | Wildlife value, fall color |
| Red Oak | *Quercus rubra* | 50-70' | 50-75' | X | X | | | | | Wildlife value, fall color |

* For the purposes of this ordinance, Small Street Trees are also referred to as Ornamental Trees for the Special Conservation Bufferyard.

**Marshall Township Ordinance Approved Plant List**

**Erosion Control**

**RECOMMENDED SHRUBS**

These are suggested species for shrub plantings in Marshall Township. Native species should be used whenever possible. Cultivated varieties of the species listed are acceptable.

| Common Name | Botanical Name | Mature Height (ft) | Mature Width (ft) | Small Shrub (under 4') | Large Shrub (over 4') | Groundcover | Flower | Fruit | Fall Color | Deer Resistant | Salt Tolerance | Evergreen | Native | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Running Serviceberry | *Amelanchier stolonifera* | 4-5' | 4-5' | | X | | X | X | X | | | | X | Full sunto partial shade |
| Red Chokeberry | *Aronia arbutifolia* | 6-10' | 3-6' | | X | | X | X | X | X | X | | X | Full sun to partial shade |
| Black Chokeberry | *Aronia melanocarpa* | 3-6' | 3-6' | | X | | X | X | X | | X | | X | Full sun to partial shade |
| Lowscape Mound Black Chokeberry | *Aronia melanocarpa 'UCONNAM165'* | 1-2' | 3-4' | X | | | X | X | X | | X | | X | Full sun to partial shade |
| Ground Hog Black Chokeberry | *Aronia melanocarpa 'UCONNAM012'* | .75'-1' | 2-3' | X | | X | X | X | X | | X | | X | Full sun to partial shade |
| Summersweet | *Clethra alnifolia* | 3-8' | 4-6' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Crystalina Summersweet | *Clethra alnifolia 'Crystalina'* | 2-3' | 3-4' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Hummingbird Summersweet | *Clethra alnifolia 'Hummingbird'* | 2-4' | 3-5' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Ruby Spice Summersweet | *Clethra alnifolia 'Ruby Spice'* | 4-6' | 3-5' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Silky Dogwood | *Cornus amomum* | 6-12' | 6-12' | | X | | X | | X | | | | X | Full sun to full shade |
| Gray Dogwood | *Cornus racemosa* | 10-15' | 10-15' | | X | | X | | X | | | | X | Full sun to full shade |
| Red Twig Dogwood | *Cornus sericea* | 6-9' | 7-10' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Isanti Red Twig Dogwood | *Cornus sericea 'Isanti'* | 4-5' | 4-7' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Arctic Fire Red Twig Dogwood | *Cornus sericea 'Farrow'* | 3-4' | 3-4' | X | | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Yellow Twig Dogwood | *Cornus sericea 'Flaviramea'* | 5-6' | 5-6' | | X | | X | | X | X | | | X | Winter interest, full sun to partial shade |
| Northern Bush Honeysuckle | *Diervilla lonicera* | 2-3' | 2-4' | X | | | X | | X | | X | | X | Full sun to partial shade |

**RECOMMENDED SHRUBS (cont.)**

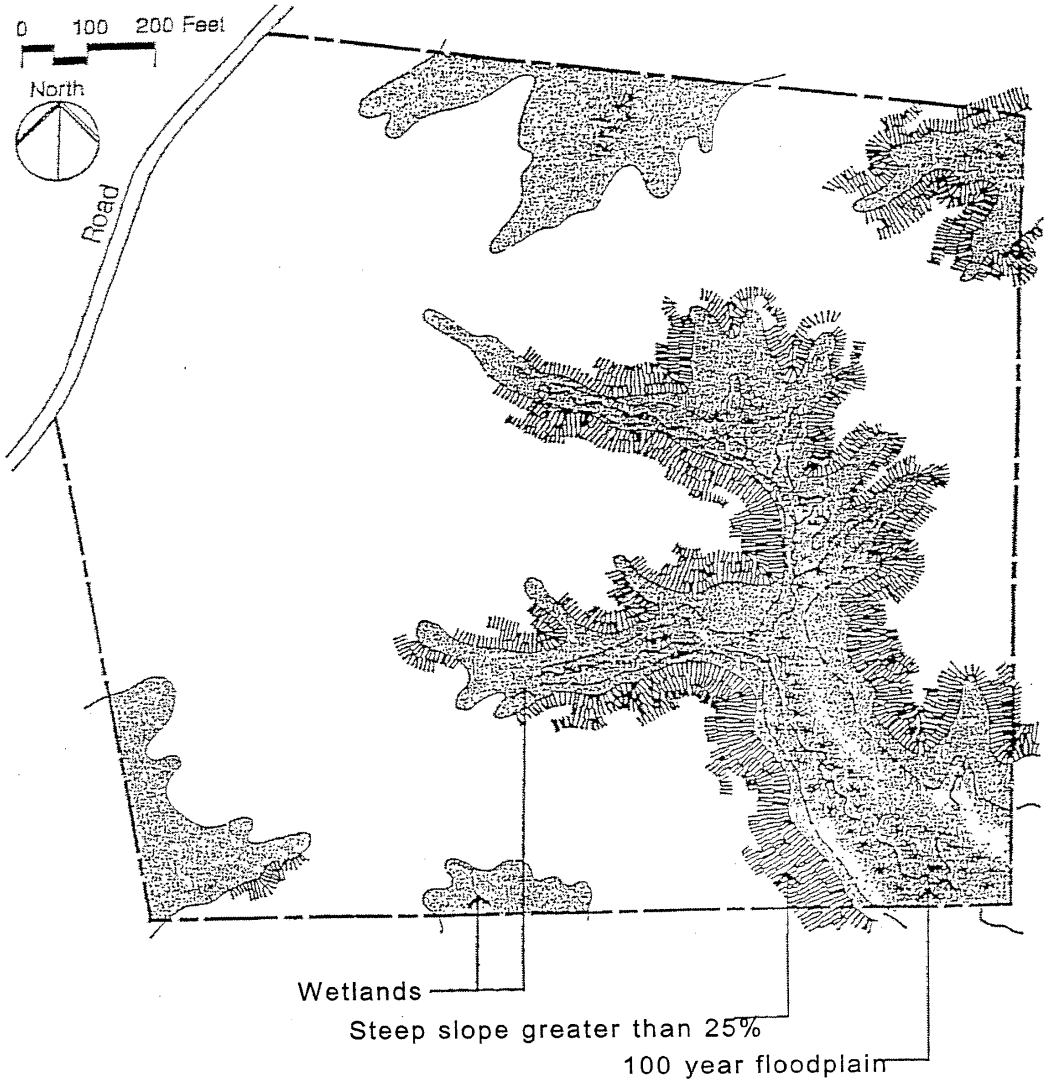
| Common Name | Botanical Name | Mature Height (ft) | Mature Width (ft) | Small Shrub (under 4') | Large Shrub (over 4') | Groundcover | Flower | Fruit | Fall Color | Deer Resistant | Salt Tolerance | Evergreen | Native | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Virginia Sweetspire | *Itea virginica* | 3-5' | 3-5' | | X | | X | | X | X | X | | X | Full sun to partial shade |
| Henry's Garnet Virginia Sweetspire | *Itea virginica 'Henry's Garnet'* | 3-4' | 4-6' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Little Henry Virginia Sweetspire | *Itea virginica 'Sprich'* | 1.5-2' | 2-2.5' | X | | | X | | X | X | X | | X | Full sun to partial shade |
| Juniper | *Juniperus spp.* | varies | varies | X | X | X | | | | X | X | X | | Some are native, most are non-native, vary in size, mostly full sun to partial shade |
| Creeping Juniper | *Juniperus horizontalis* | 0.5-1.5' | 5-8' | X | | X | | | | X | X | X | X | Full sun |
| Wilton Creeping Juniper | *Juniperus horizontalis 'Wiltonii'* | 0.25-0.5' | 6-8' | X | | X | | | | X | X | X | X | Full sun |
| Sea Green Juniper | *Juniperus x pfitzeriana 'Sea Green'* | 4-6' | 6-8' | | X | | | | | X | X | X | | Full sun |
| Kallay's Compact Juniper | *Juniperus x pfitzeriana 'Kallay's Compact'* | 2-3' | 3-6' | X | | | | | | X | X | X | | Full sun |
| Green Mound Juniper | *Juniperus procumbens 'Green Mound'* | 0.5-0.75' | 4-6' | X | | X | | | | X | X | X | | Full sun |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blue Star Juniper | *Juniperus squamata 'Blue Star'* | 1-3' | 1-4' | **X** | | | | | | X | X | X | | Full sun |
| Grey Owl Juniper | *Juniperus virginiana 'Grey Owl'* | 2-3' | 4-6' | **X** | | | | | | X | X | X | X | Full sun |
| **RECOMMENDED SHRUBS (cont.)** | | | | | | | | | | | | | | |
| **Common Name** | **Botanical Name** | **Mature Height (ft)** | **Mature Width (ft)** | **Small Shrub (under 4')** | **Large Shrub (over 4')** | **Groundcover** | **Flower** | **Fruit** | **Fall Color** | **Deer Resistant** | **Salt Tolerance** | **Evergreen** | **Native** | **Notes** |
| Fragrant Sumac | *Rhus aromatica 'Gro-Low'* | 1.5-2' | 6-8' | **X** | | **X** | | X | X | X | X | | X | Full sun to partial shade |
| Smooth Sumac | *Rhus glabra* | 9-15' | 9-15' | | **X** | | X | X | X | | X | | X | Full sun to partial shade |
| Staghorn Sumac | *Rhus typhina* | 15-25' | 20-30' | | **X** | | X | X | X | | X | | X | Full sun |
| Arrowwood Viburnum | *Viburnum dentatum* | 6-10' | 6-10' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Blue Muffin Arrowwood Viburnum | *Viburnum dentatum 'Christom'* | 3-5' | 3-4' | **X** | | | X | X | X | X | X | | X | Full sun to partial shade |
| Little Joe Arrowwood Viburnum | *Viburnum dentatum 'KLMseventeen'* | 4-5' | 4-5' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Autumn Jazz Arrowwood Viburnum | *Viburnum dentatum 'Ralph Senior'* | 6-10' | 6-10' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |
| Nannyberry Viburnum | *Viburnum lentago* | 14-16' | 6-12' | | **X** | | X | X | X | X | | | X | Full sun to partial shade |
| Blackhaw Viburnum | *Viburnum prunifolium* | 12-15' | 6-12' | | **X** | | X | X | X | X | X | | X | Full sun to partial shade |

| **ORNAMENTAL GRASSES** | |
|---|---|
| Big Bluestem | Andropogon geradii |
| Sideoat Grama | Boutaloua curtipendula |
| River Oats | Chasmanthium latifolium |
| Switchgrass | Panicum virgatum |
| Little Bluestem | Schizachyrium scoparium |
| Prairie Dropseed | Sporobolus heterolepis |
| Indiangrass | Sorghastrum nutans |

# APPENDIX B - CONSERVATION SUBDIVISION FOUR-STEP PROCESS[4]

The following four-step process shall be utilized when subdividing property in accordance with Zoning Ordinance See Section 208.403 Q Conservation Subdivision Design. The diagrams below are meant to illustrate the process and concepts.

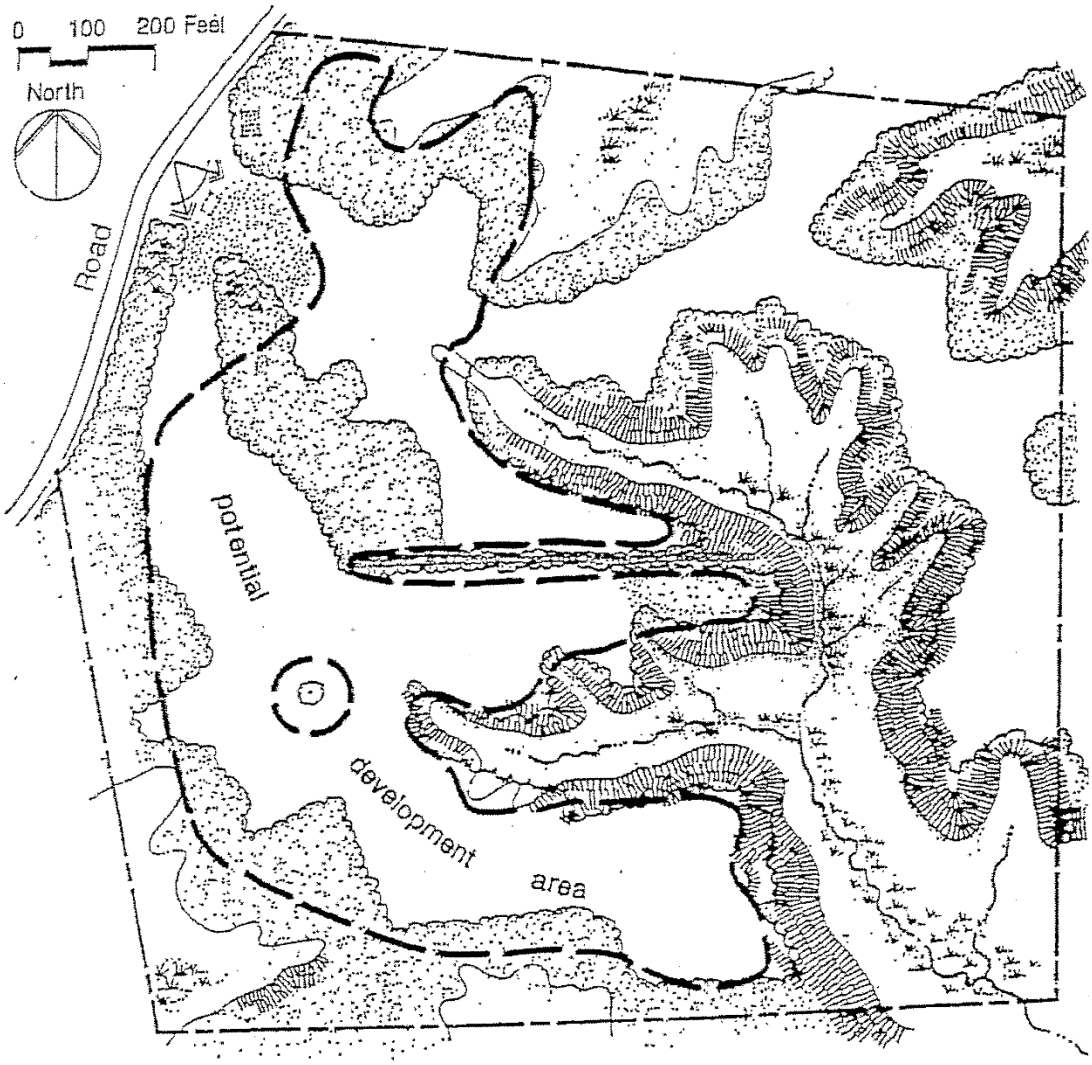



**STEP ONE:** Identification of Primary Conservation Areas (See Section 208.403 Q)

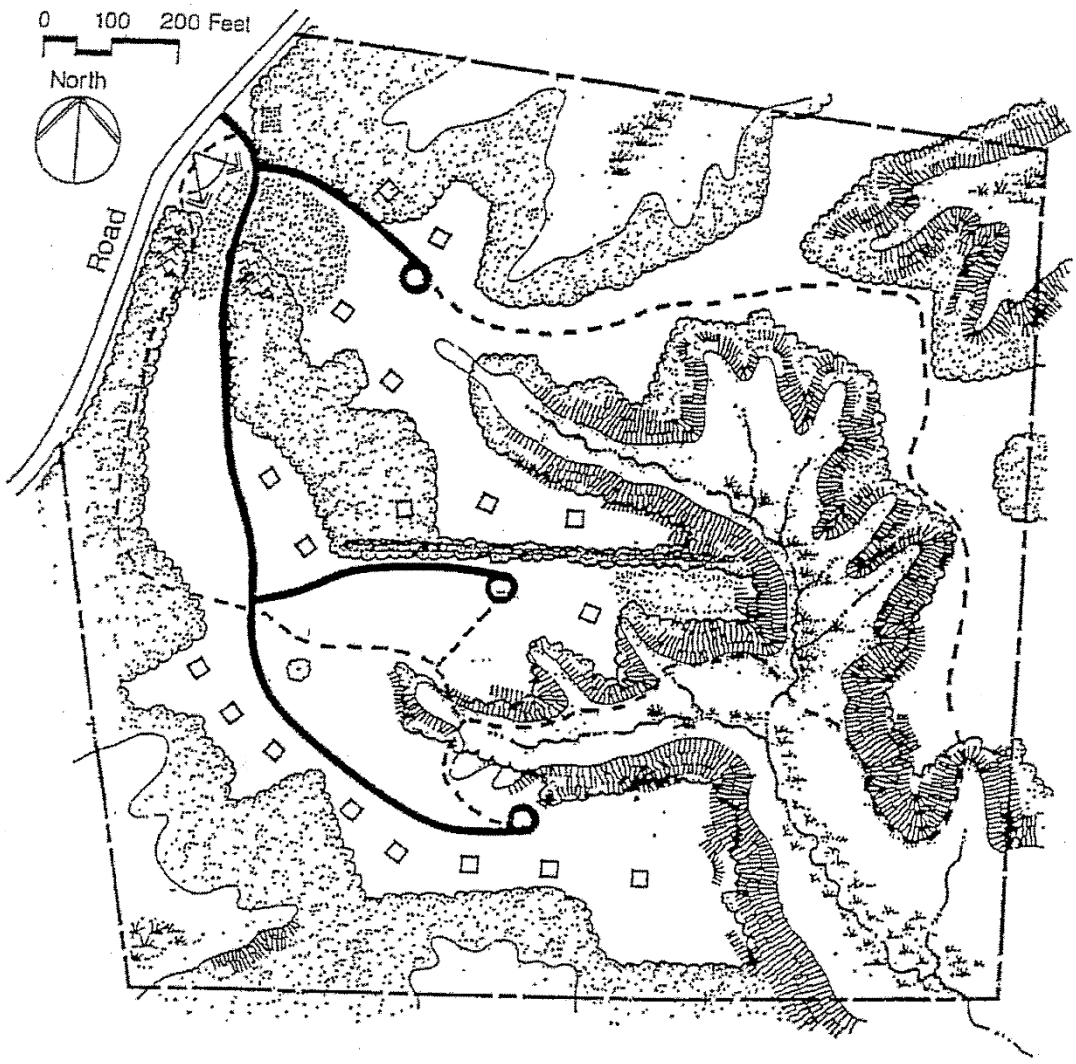
From: *Growing Greener: A Conservation Planning Workbook for Municipal Officials in Pennsylvania,* Natural Lands Trust, Media, Pennsylvania, 1997.

STEP ONE: Identification of Secondary Conservation Areas, (See Section 208.403 Q)

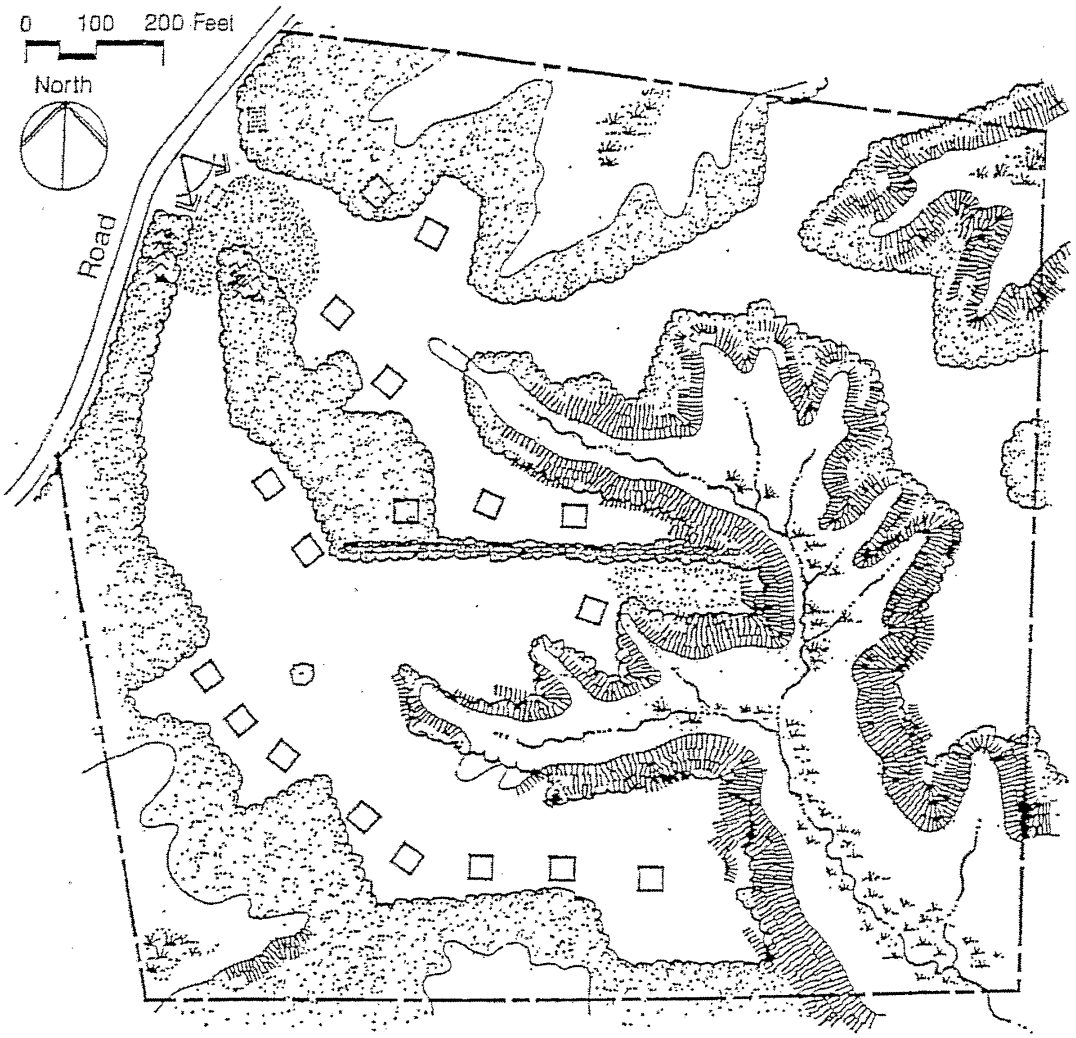
**STEP ONE:** Yields Potential Development Areas



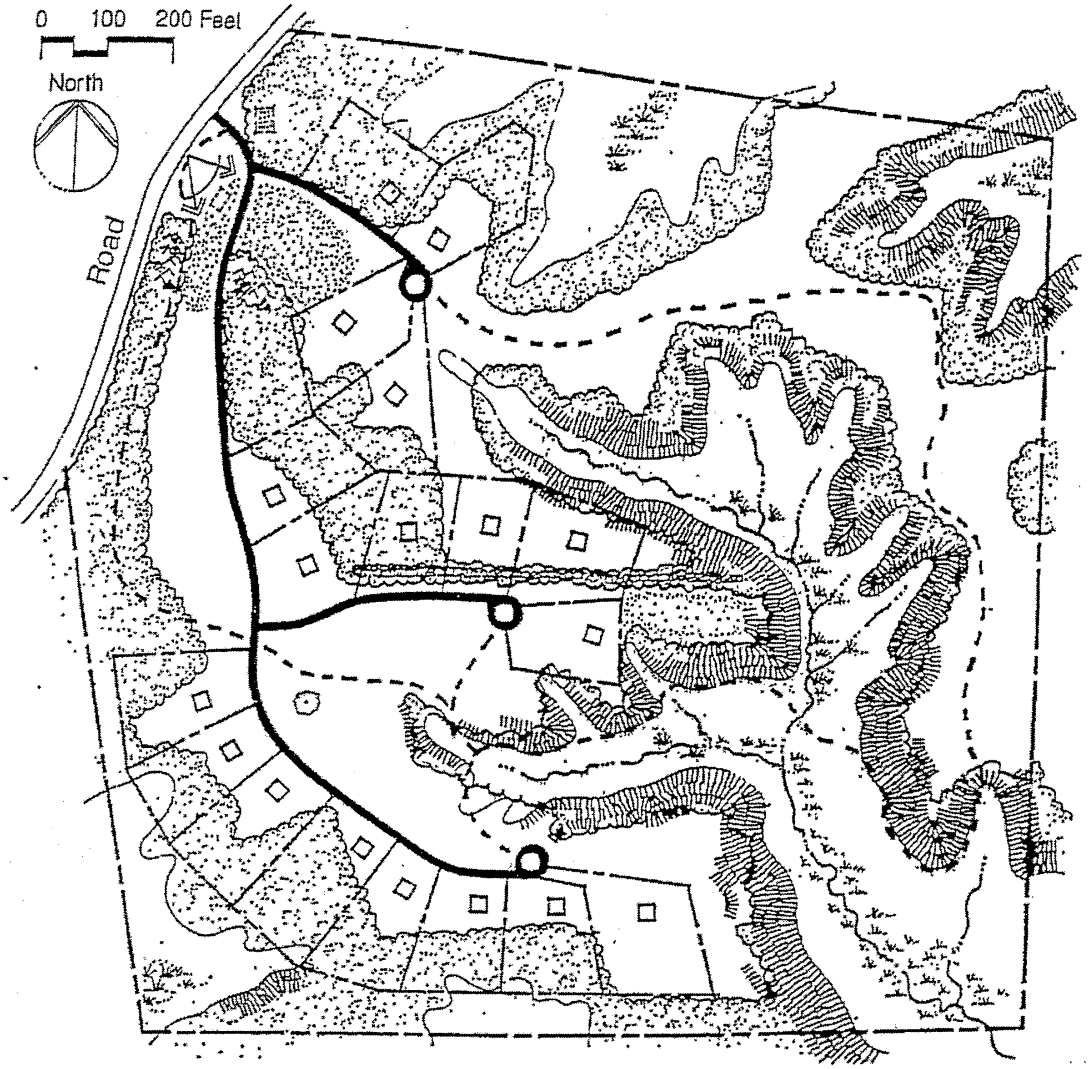
**STEP TWO:** Align the Street and Trials Networks



STEP THREE: Locating Housing Sites.



STEP FOUR: Draw in the Lot Lines.



## DETERMINING ADJUSTED TRACT AREA (ATA) FOR CONSERVATION SUBDIVISIONS — CLUSTER OPTION

ATA = the gross tract area minus the "constrained land."

"Constrained Land" = the acreage resulting from applying multiplication factors to the areas of site constraints.

Gross Tract Area = _____ acres

| **Description of Constraint** | **Area of site constraint (acres)** | **Resource Protection Factor (multiplier)** | **"Constrained Land" (acres)** |
|---|---|---|---|
| Public Street or highway RIGHTS-OF-WAY, existing | | 1.00 | |
| Land under private streets, existing | | 1.00 | |
| Utility RIGHTS-OF-WAY, existing | | 1.00 | |
| Wetlands | | 0.90 | |
| Floodways within 100-year floodplain | | 1.00 | |
| Floodplain, excluding floodways or wetlands within floodplains | | 0.25 | |
| Steep slopes greater than 25% | | 0.70 | |
| **Total "Constrained Land"** | NA | NA | |

_____ acres gross - _____ acres "constrained land" = _____ acres ATA

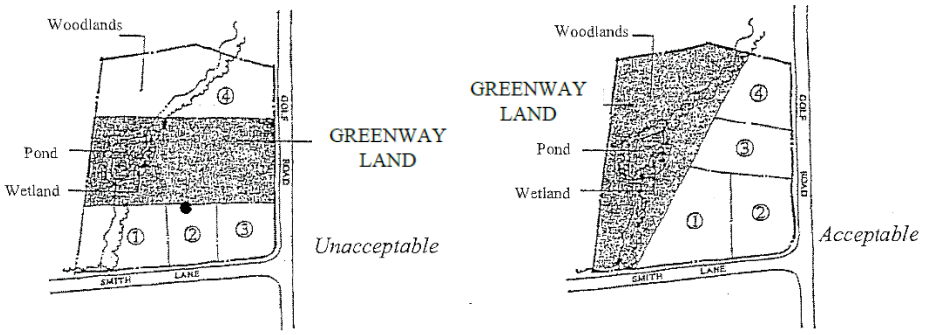
_____ acres ATA x density factor ____ = _____ number of units permitted

_____ acres ATA x greenway preservation percentage = _____ acres greenway land

*Adapted from Natural Lands Trust, Inc. Feb. 2002*

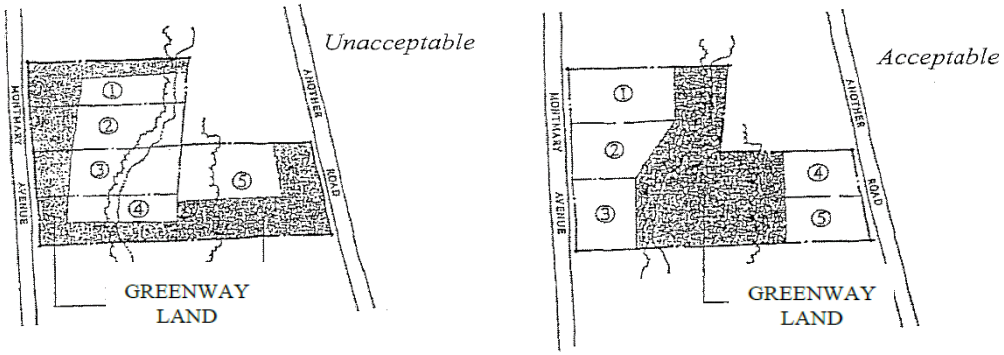
# APPENDIX C - OPEN SPACE/CONSERVATION AREA DESIGN GUIDELINES FOR USE IN CONSERVATION SUBDIVISION DESIGN

Greenway Land should include the most sensitive resource areas of the property.



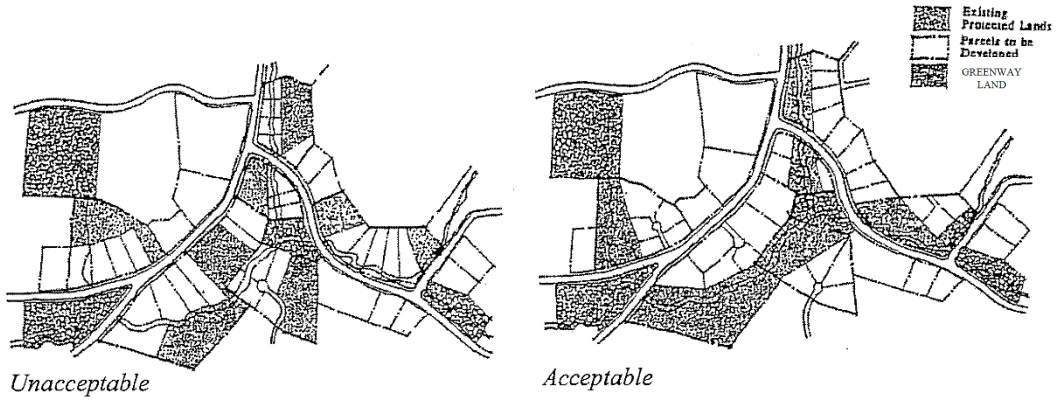

## GUIDELINE NO. 2

Greenway Land should be designed as one large block of land with logical, straightforward boundaries.




## GUIDELINE NO. 3

The Greenway Land should be designed as part of a larger continuous and integrated open space system.



# Appendix D – Applicability of Prior Ordinances

## Sections 208-91.7-208-91.23 of the 1992 Zoning Ordinance pertaining to the RRTP Zoning District:

### § 208-91.7. Area and BULK Regulations for NONRESIDENTIAL Permitted USES, CONDITIONAL USES and ACCESSORY USES.

Area and BULK regulations for all permitted USES, CONDITIONAL USES, and ACCESSORY USES shall be as follows, (in all cases public water and sewer are required):

A. LOT size: no minimum LOT size

B. LOT width at BUILDING SETBACK line: no minimum

c. LOT width at STREET line: no minimum

D. IMPERVIOUS SURFACE RATIO: eighty percent (80%) maximum of the buildable area of the DISTRICT, (Buildable area shall be determined utilizing the Environmental Resources Identification and Buildable Area Determination found in§ 208-91.6). Maximum IMPERVIOUS SURFACE RATIO calculations shall include all structures, including ACCESSORY BUILDINGS, and all paved surfaces.

E. FRONT YARD: no minimum unless ABUTTING any STREET classified as a MINOR ARTERJAL, MAJOR ARTERIAL, MINOR COLLECTOR, MAJOR COLLECTOR, or INTERSTATE by § 208-9 of this chapter, including Wheatland Road and Manor Road in which there shall be a one hundred (100) feet undisturbed minimum SETBACK. The BOARD OF SUPERVISORS may permit the disturbance of the SETBACK when the disturbance is necessary for the placement of the logical access and roadway network, stormwater detention facilities, utility lines, utility STRUCTURES, and trail networks. In keeping with the intent of the ZONING overlay DISTRJCT to maximize the amount of undisturbed green space, the Board shall ensure that the disturbance of the SETBACK is kept to the absolute minimum necessary. The burden shall be on the applicant to demonstrate, to the satisfaction of the Board, the unavailability of alternative sites outside of the SETBACK area.

(1) If the required RESIDENTIAL component is utilized as a transition USE from the existing RESIDENTIAL USES/zones adjacent to the SITE, then the minimum required undisturbed -SETBACK of one-hundred (100) feet shall be maintained.

(2) If the transition USE from the existing RESIDENTIAL USES/zones into the SITE is a NONRESIDENTIAL USE, then the minimum BUILDING SETBACK shall consist of one-hundred (I 00) feet undisturbed SETBACK, plus an additional BUILDING SETBACK of one-hundred (100) feet for a total of two-hundred (200) feet.

F. SIDE YARD: no minimum, unless:

(1) Adjoining SUBURBAN RESIDENTIAL (SR), ESTATE (E) OR OPEN SPACE, PUBLIC AND CONSERVATION (OSPC) zoned property: One hundred (100) feet undisturbed SETBACK minimum

(a) If the required RESIDENTIAL component is utilized as a transition USE from the existing RESIDENTIAL USES/zones adjacent to the SITE, then the minimum required undisturbed SETBACK of one-hundred (100) feet shall be maintained.

(b) If the transition USE from the existing RESIDENTIAL USES/zones into the SITE is a NONRESIDENTIAL USE, then the minimum BUILDING SETBACK shall consist of one hundred (100) feet undisturbed SETBACK, plus an additional BUILDING SETBACK of one hundred (100) feet for a total of two hundred (200) feet.

(2) ABUTTING any STREET classified as a MINOR ARTERJAL, MAJOR ARTERJAL, MINOR COLLECTOR, MAJOR COLLECTOR or INTERSTATE by § 208-9 of this chapter, including Wheatland Road and Manor Road: One hundred (100) feet undisturbed SETBACK minimum.

(3) The BOARD OF SUPERVJSORS may permit the disturbance of the SETBACK when the disturbance is necessary for the placement of the logical access and roadway network, stormwater detention facilities, utility lines, utility STRUCTURES, and trail networks. In keeping with the intent of the ZONING overlay DISTRICT to maximize the amount of undisturbed green space, the BOARD shall ensure that the disturbance of the SETBACK is kept to the absolute minimum necessary. The burden shall be on the applicant to demonstrate, to the satisfaction of the BOARD, the unavailability of alternative SITES outside of the SETBACK area.

G. REAR YARDS: no minimum, unless:

(1) adjoining SUBURBAN Residential (SR), ESTATE (E), or OPEN SPACE, PUBLIC CONSERVATION (OSPC) zoned property: One (100) feet undisturbed SETBACK minimum

(a) If the required RESIDENTIAL component is utilized as a transition USE from the existing RESIDENTIAL USES/zones adjacent to the SITE, then the minimum required undisturbed SETBACK of one hundred (100) feet shall be maintained.

(b) If the transition USE from the existing RESIDENTIAL USES/zones into the SITE is a

NONRESIDENTIAL USE, then the minimum BUILDING SETBACK shall consist of one hundred (100) feet undisturbed SETBACK, plus an additional BUILDING SETBACK of one hundred (100) feet for a total of two hundred (200) feet.

(2) The BOARD OF SUPERVISORS may permit the disturbance of the SETBACK when the disturbance is necessary for the placement of the logical access and roadway network, stormwater detention facilities, utility lines, utility STRUCTURES, and trail networks. In keeping with the intent of the ZONING overlay DISTRICT to maximize the amount of undisturbed green space, the BOARD shall ensure that the disturbance of the SETBACK is kept to the absolute minimum necessary. The burden shall be on the applicant to demonstrate, to the satisfaction of the BOARD, the unavailability of alternative SITES outside of the SETBACK area.

H. Building HEIGHT:

(1) Except for RESIDENTIAL STRUCTURES, no STRUCTURE shall exceed five stories, or sixty-five (65) feet in height whichever is lowest, and shall not exceed one-thousand two-hundred ninety (1290) feet elevation above sea level.

(2) RESIDENTIAL STRUCTURES shall not exceed thirty-five (35) feet in height and shall not exceed one-thousand two-hundred ninety (1290) feet elevation above sea level.

(3) ACCESSORY STRUCTURES shall not exceed the height of the principal_ BUJLDING.

I. LOT DEPTH: no minimum

J. Minimum required RESIDENTIAL component: The RESIDENTIAL, Research and Technology Park (RRTP) DISTRICT shall be developed with a minimum of ten percent (I0%), not to exceed fifty percent (50%), of the buildable area of the DISTRICT as a RESIDENTIAL component. This RESIDENTIAL component shall be comprised of DWELLING units of the type and density described below, or any combination thereof:

| | | |
|---|---|---|
| (I) | Two-Family DWELLINGS | 4 du/acre maximum |
| (2) | QUADRAPLEXES | 6 du/acre maximum |
| (3) | TOWNHOUSES | 8 du/acre maximum |
| (4) | GARDEN APARTMENTS | IO du/acre maximum |

Whenever practical, the RESIDENTIAL component shall be used as a transition USE from existing RESIDENTIAL USES/ZONES into the RESIDENTIAL, Research and Technology Park (RRTP).

## § 208-91.8. Environmental resource identification and buildable area determination.

The following sections provide the process by which the buildable area of the RESIDENTJAL, Research and Technology Park (RRTP) DISTRICT is to be determined. This determination shall be applied SJTE-wide as part of the master-planning process. A minimum of thirty-five percent (35%) of the DISTRICT shall be preserved in OPEN SPACE. This minimum OPEN SPACE shall be comprised of all PRIMARY CONSERVATION LANDS plus any percentage of SECONDARY CONSERVATION LANDS needed to meet the minimum required OPEN SPACE.

## § 208-91.9. Existing resources/site analysis plan.

The developer of the RESJDENTIAL, Research and Technology Park (RRTP) ZONING DJSTRICT shall submit an Existing Resources/Site Analysis Plan of the DISTRICT which shall identify all the special or noteworthy elements of the natural and cultural landscape, including those features of environmental, historic, or scenic value.

A. The existing Resource/Site Analysis Plan shall be drawn to a scale no Jess than one (I) inch equals one hundred (100) feet and shall identify the following features:

(I) WETLANDS

(2) One hundred year FLOODPLAINS as identified by the FEMA Flood Insurance Rate Map for Allegheny County.

(3) SLOPES of twenty-five percent (25%) or greater

(4) SLOPES of fifteen percent (15%) to twenty-four percent (24%)

(5) MATURE and YOUNG WOODLANDS

(6) Active agricultural areas

(7) Any historic, archeological and cultural features, (i.e., old STRUCTURES, ruins, cellar holes, earthworks, stone walls, burial grounds, etc.)

(8) Any other STRUCTURE on the SITE

(9) Significant views into and out of the SITE

(10) DRAINAGEWAYS

## § 208-91.10. PRIMARY CONSERVATION AREAS.

PRIMARY CONSERVATION AREAS are those lands that display extremely sensitive environmental constraints. These areas are to remain undeveloped and preserved in the DISTRICTS OPEN SPACE. Those features which shall be identified as PRIMARY CONSERVATION AREAS shall be: WETLANDS, One-hundred Year FLOODPLAINS, and STEEP SLOPES twenty-five percent (25%) or greater. All buildable land will be those areas not limited by the basic constraints posed by the "PRIMARY CONSERVATION AREAS."

## § 208-91.11. SECONDARY CONSERVATION AREAS

SECONDARY CONSERVATION AREAS are those lands having features of lesser environmental sensitivity as the PRIMARY CONSERVATION AREA. These areas may be developed on a limited basis. SECONDARY CONSERVATION LANDS shall make up the balance of the DISTRICT'S minimum required OPEN SPACE beyond that which is comprised by PRIMARY CONSERVATION LANDS as described above. Those features which shall be identified as SECONDARY CONSERVATION AREAS are: DRAINAGEWAYS, MATURE WOODLANDS, YOUNG WOODLANDS, and STEEP SLOPES fifteen percent (15%) to twenty four percent (24%).

## § 208-91.12. Conservation design process.

The following four-step design process shall be utilized in designing the DEVELOPMENT within the RESIDENTIAL, Research Technology Park (RRTP) District. This design process shall work to preserve all significant natural and cultural features within the DJSTRJCT while yielding a full-density DEVELOPMENT. The four steps shall be as follows:

Step One: Identify PRIMARY and SECONDARY CONSERVATION AREAS to determine potential DEVELOPMENT areas.

Step Two: Locate the BUJLDING SITES, (NONRESIDENTIAL and RESIDENTIAL) within the determined DEVELOPMENT areas.

Step Three: Align STREET and trail networks

Step Four: Draw in the LOT lines

## § 208-91.13. Step one: Identify PRIMARY and SECONDARY CONSERVATION AREAS to determine DEVELOPMENT areas

See § 208-91.9 "Existing Resources/Site Analysis Plan",§ 208-91.10 "PRJMARY CONSERVATION AREAS", and § 208-9I.I I "SECONDARY CONSERVATION AREAS." Once those features have been delineated on the Existing Resources/Site Analysis Piao, the land most suitable for DEVELOPMENT, ("Potential DEVELOPMENT Areas") will be identified. See Appendix C for an example of Step one.

## § 208-91.14. Step two: Locate the BUILDJNG SITES, (NONRESIDENTIAL and RESIDENTIAL) within the determined DEVELOPMENT areas.

BUILDING SITES shall be located within the Potential DEVELOPMENT Area of the DISTRJCT in a manner that maximizes the number of BUILDINGS enjoying direct views and access to the DISTRJCT'S CONSERVATION lands. When siting the BUILDINGS within the DISTRJCT, consideration shall be made to minimize the visibility of the BUILDINGS from points outside the DISTRJCT. See appendix C for an example of Step two.

A. BUILDINGS shall be "clustered" within the Potential DEVELOPMENT Area of the DISTRJCT.

B. Care should be taken not to locate BUILDINGS within SECONDARY CONSERVATION features because particular local importance should be preserved.

C. The DEVELOPER shall consider locating the BUILDINGS around a neighborhood common.

D. BUILDING SITES shall be located so as to take into consideration required road buffers. Existing ground cover should be preserved.

## § 208-91.15. Step Three: Align STREET and trail networks.

After determining the BUILDING SITES in Step Two, the next step is to provide access for the BUILDINGS with a logical and efficient system of STREETS and trails according to the guidelines provided below. See Appendix C for an example of Step Three.

The establishment of a DISTRJCT-wide trail network that integrates into any existing TOWNSHIP trail networks and/or parks will be required.

A. WETLAND crossings should be designed to avoid large trees, mature tree stands, and other prominent features when possible.

B. The DEVELOPER may consider splitting the travel Janes so that they curve apart forming an elongated, boulevard-style island where ce1tain trees or other features may be preserved or given visual prominence.

C. Trail networks should be designed to take advantage of the environmental features of the SITE, providing the residents with passive recreation use of the OPEN SPACE, as well as access to adjoining greenways and TOWNSHIP trails and parks.

(1) Trails shall be constructed according to the TOWNSHIP specifications

(2) Modifications from these specifications may be granted by the BOARD in cases of difficulty caused by topography or other physical constraint of the SITE.

(3) Trails may be constructed within the required one hundred (1OO) foot undisturbed SETBACK along ZONING DISTRICT boundaries.

## § 208-91.16. Step Four: Drawing in the LOT lines.

After the BUILDING SITES, STREET and trail networks have been devised, the next step involves drawing in the LOT lines around each BUILDING on the SITE. See Appendix C for an example of Step Four.

## § 208-91.17. Design Standards for SITE Planning OPEN SPACE Greenways within the RESIDENTIAL, Research Technology Park (RRTP) DISTRICT.

The design standards established under this Ordinance have been done to support the natural resource conservation objectives of the TOWNSHIP Comprehensive Plau, while accommodating new growth and DEVELOPMENT. The purposes of these standards are:

A. To allow for flexibility in LOT design which directs BUILDINGS, SITE disturbance and activities to the most suitable locations with respect to the natural conditions of the DISTRICT.

B. To protect, as much as practicable, unique features of the TOWNSHIP, such as aquifers, water bodies, FLOODPLAINS, WETLANDS, WOODLANDS, and STEEP SLOPES from disturbance.

C. To minimize visual impact upon the scenic rural character of the TOWNSHIP by fitting new construction harmoniously into the natural landscape; and

D. To provide an opportunity for creative, varied, environmentally sensitive and economical DEVELOPMENT within the RESIDENTJAL, Research Technology Park (RRTP) DISTRICT.

## § 208-91.18. Design of conservation lands.

A key feature of the RESIDENTIAL, Research Technology Park (RRTP) DISTRICT are the standards governing the location and layout of lands to be conserved through the DEVELOPMENT of the DISTRICT. At a minimum, thirty percent (30%) of the DISTRICT shall be set aside as conservation lands. Conservation lands shall include all of the lands identified as "PRIMARY CONSERVATION AREAS" in Step One. The remaining lands to be dedicated to make up the balance of the required thirty-five percent

(35%) OPEN SPACE minimum shall come from those areas identified as SECONDARY CONSERVATION AREAS that adhere to the three basic principles of conservation land layout specified below. The BOARD OF SUPERVISORS may permit the disturbance of PRIMARY CONSERVATION LANDS when the disturbance is necessary for the placement of the logical access and roadway network, stormwater detention facilities, utility lines, utility STRUCTURES, and trail networks. In keeping with the intent of the ZONJNG overlay DISTRICT to preserve PRIMARY CONSERVATION LANDS and to maximize the amount of undisturbed green space, the BOARD shall ensure that the disturbance of PRIMARY CONSERVATION LANDS is kept to the absolute minimum necessary. The burden shall be on the applicant to demonstrate to the satisfaction of the BOARD, the unavailability of alternative SITES outside of PRIMARY CONSERVATION LANDS and the DEVELOPER shall set aside other lands so that the overall minimum OPEN SPACE requirement is met. See Appendix D for an example of the guidelines specified below.

A. Conservation areas shall include the most environmentally sensitive resource areas of the DISTRICT.

B. Fragmentation of the conservation lands shall be minimized so that these resource areas are not divided into numerous small parcels located within various parts of the DISTRJCT.

C. Conservation areas shall be designed as part of larger continuous and integrated OPEN SPACE systems.

§ 208-91.19. Permitted USES and improvements within the OPEN SPACE/greenways in the RESIDENTIAL, Research Technology Park (RRTP) DISTRICT.

Subject to the provisions of the ZONING ORDINANCE, the following USES and improvements shall be permitted on OPEN SPACE lands:

A. Passive Recreation (including, but not limited to, walking, hiking, bicycling, etc., but specifically excluding motorized off-road vehicles and shooting ranges).

B. Stormwater Detention Facilities:

(I) Stormwater management facilities, when located in OPEN SPACE lands shall be located and designed to minimize the impact of the facility to the OPEN SPACE. The facility shall be sited and designed to preserve the value and function of the OPEN SPACE and to maintain the aesthetic and scenic landscapes of the OPEN SPACE.

(2) Stormwater management facilities shall be sited to the maximum extent possible, in areas not containing WETLANDS, MATURE WOODLANDS, or STEEP SLOPES exceeding 20% in grade.

C. Utility Lines and Substations

## § 208-91.20. Evaluation Criteria.

In evaluating the layout of the BUILDINGS and the OPEN SPACE, the following criteria shall be considered by the PLANNING COMMISSION and the BOARD OFSUPERVISORS as indicating design appropriate to the SITE's natural, historic and cultural features, and meeting the purpose of this Ordinance. Diversity and originality in BUILDING layout shall be encouraged to achieve the best possible relationship between DEVELOPMENT and the conservation areas. Accordingly, the DEVELOPER shall present a plan that meets the following criteria:

A. Protects all one-hundred year FLOODPLAINS, WETLANDS, and STEEP SLOPES twenty-five percent (25%) or greater from clearing, grading, filling, or DEVELOPMENT, (except as may be deemed necessary for DEVELOPMENT by the BOARD OF SUPERVISORS and approved as part of an acceptable SITE DEVELOPMENT).

B. Preserves and maintains, to the greatest extent possible, those areas identified as SECONDARY CONSERVATION AREAS.

C. Avoids or minimizes siting new construction on prominent hilltops or ridges, by taking advantage of lower topographic features. See § 208-91.7.H.

D. Protects rural character and improves public safety and vehicular carrying capacity by avoiding DEVELOPMENT fronting directly onto existing public roads. Establishes landscape BUFFERS in accordance with appropriate sections of the ZONING ORDINANCE.

E. Landscapes common areas, such as community greens and cul-de-sacs, with various native species of trees and shrubs. Deciduous shade trees should be planted along STREETS within a minimum fifteen (15) foot wide planting strip.

F. Provide passive recreation areas in suitable locations that offer convenient access and adequate screening from nearby RESIDENTIAL ZONING DISTRICTS where applicable.

G. Include a pedestrian circulation system designed to assure that pedestrians can walk safely and easily on the SITE between properties and activities or special features within the DISTRJCT. All roadside footpaths shall connect with off-road trails, which in tom shall link with potential and/or existing trails, open space, or parks.

H. Provides OPEN SPACE that is contiguous and whose configuration is in accordance with the guidelines contained in § 208-91.17 and Appendices C and D.

I. A traffic impact study (TIS) shall be required, (unless otherwise waived by the BOARD OF SUPERVISORS) for:

(1) All commercial land DEVELOPMENTS, including new STRUCTURES or additions to STRUCTURES, generating average weekday traffic of at least two hundred (200) trips per day based on the latest edition of Trip Generation, Institute of Transportation Engineers,

(2) Any change in commercial land USE resulting in net increase of two hundred (200) trips per day based on the edition of Trip Generation, Institute of Transportation Engineers,

(3) All RESIDENTIAL land DEVELOPMENTS consisting of twenty (20) or more D\VELLING UNITS,

(4) All CONDITIONAL USES in RESIDENTIAL DISTRICTS generating a net increase of forty (40) trips per day based on the latest edition of Trip Generation, Institute of Transportation Engineers,

The TIS shall be made by a traffic consultant mutually agreeable to both parties. All costs of the TIS shall be borne by the property owner or applicant. The contents of the TIS and review of the same shall be in accordance with TOWNSHIP Code § 174-6.C.(J 4).

## § 208-91.21. Screening and BUFFERYARDS.

In addition to the requirements of Article XV "Corridor Enhancement District" and Article XXX "Screening BUFFERYARDS and Trees", the following BUFFERYARDS shall be installed where applicable within the RESIDENTIAL, Research and Technology Park (RRTP) DISTRICT. In all cases, existing materials that are retained on the SITE may be credited toward the required BUFFERYARD materials.

A. Along Knob Road, Brush Creek Road, and Warrendale-Bayne Road: BUFFERYARD E, minimum width 75 feet.

B. Along adjoining ZONING DISTRJCT boundaries: BUFFERYARD E, minimum width 75 feet.

C. Perimeter screening, (between BUILDINGS, PARKING FACILITIES and the STREET): BUFFERYARD B, 15 feet minimum width.

D. Interior PARKING LOT landscaping: See§ 208-189.

E. Screening between NONRESIDENTIAL and RESIDENTIAL USES within the DISTRJCT: BUFFERYARD C.

## § 208-91.22. Additional requirements/miscellaneous.

The following miscellaneous provisions shall apply to development within the Residential, Research Technology Park DISTRICT:

A. Lighting:

(I) Maximum height of light standard: twenty-five (25) feet

(2) Maximum wattage of bulbs: Four hundred (400) watts

(3) Intensity of outdoor lighting shall be limited within usable area of a site (i.e., PARKING areas, walkways, etc.) To an average intensity at the ground of five (5) footcandles, with a maximum intensity at any given point of the ground of twenty-five (25) footcandles, unless otherwise approved by the BOARD OF SUPERVISORS.

(4) The standards regulating lighting in Article XXXIV "Performance Standards" shall still apply.

## § 208-91.23. Open space ownership and administration.

The requirements pertaining to ownership and administration of OPEN SPACE within the Residential, Research and Technology Park (RRTP) DISTRICT shall be as outlined below.

A. Standards for location and management shall be as follows:

(1) Ownership and maintenance of OPEN SPACE: Property Owner's Association or DEVELOPER.

(2) An essential element of the Master Plan is a written description and plan for the disposition of ownership of OPEN SPACE land designating those areas to be offered for dedication or to be owned by the specific form of organization proposed.

(a) The BOARD OF SUPERVISORS of Marshall Township may, at time and from time to time, accept the dedication of land or any interest therein for public USE and maintenance at their discretion.

(b) In the event that the OPEN SPACE is not dedicated to the TOWNSHIP, the land owner shall provided for and establish an organization for the ownership and maintenance of the OPEN SPACE, and such organization shall not be dissolved nor shall it dispose of the OPEN SPACE, by sale or otherwise (except to an organization conceived and established to own and maintain the OPEN SPACE), except by dedication of the same to the public. In any case, the organization provided for the ownership of OPEN SPACE land, not dedicated to the public, shall be constituted of property owners or owner of the development. The plan may provide that the property-owner's association may lease the OPEN SPACE lands to the DEVELOPER, his heirs, successors, or assigns or to other qualified person or corporation for operation and maintenance of OPEN SPACE lands, but such a lease agreement shall provide:

[l] Access shall be provided to the OPEN SPACE lands contained therein.

[2] That OPEN SPACE to be leased shall be maintained for the purposes set forth in this chapter.

[3] That the operation of OPEN SPACE facilities (i.e., trails) shall be for the benefit of and be open to the general public.

(c) The form of the lease shall be subject to the approval of the BOARD OF SUPERVISORS and any transfer or assignment of the lease shall be further subject to the approval of the BOARD OF SUPERVISORS. Lease arrangements so entered upon shall be recorded with the Recorder of Deeds of Allegheny County within thirty (30) days of their execution, and a copy of the recorded lease shall be filed with the Secretary of the TOWNSHIP.

(d) The plan to provide for the ownership and maintenance of OPEN SPACE shall include:

[1] A complete description of the organization to be established for the ownership of OPEN SPACE, if any, and the methods by which this organization shall be established and maintained.

[2] A method reasonably designed to give adequate notice to property owners within the DEVELOPMENT in the event of assumption of the maintenance of OPEN SPACE lands by the TOWNSHIP as hereafter provided.

(e) In the event that the organization established to own and maintain OPEN SPACE of any successor organization shall at any time after establishment of the DEVELOPMENT fail to maintain the OPEN SPACE in reasonable order and condition in accordance with the development, the BOARD OF SUPERVISORS may proceed to demand that the deficiencies of maintenance be corrected or that the TOWNSHIP will enter upon and maintain OPEN SPACE. Notice to the affected property owners shall set forth the manner in which the organization has failed to maintain the common OPEN SPACE in reasonable condition, and said notice shall include a demand that such deficiencies of maintenance be corrected within thirty (30) days thereof and shall state the date and place of a hearing thereon which shall be held within fourteen (14) days of the notice. The cost of such maintenance by the TOWNSHIP shall be assessed ratably against all properties within the DEVELOPMENT and shall become a lien on said properties. The TOWNSHIP at the time of entering upon said OPEN SPACE, for the purposes of maintenance, shall file a notice of lien in the Office of the Prothonotary of Allegheny County upon the properties affected by the lien within the DEVELOPMENT.

(f) Relationship of OPEN SPACE to natural features: See § 208-91.17 and Appendix D.