CAZENOVIA LAKEFRONT

DEVELOPMENT GUIDELINES

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DEVELOPMENT GUIDELINES

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LAKEFRONT DEVELOPMENT

Early consultation with the Town of Cazenovia Planning Board will expedite the approval process to lead to better outcomes. Property owners are also advised to investigate the need for state or federal permits.

Historically, significant portions of Cazenovia Lake have had a developed lakefront. Existing residential properties established walks, steps, patios, decks, docks, boat houses, and boat storage areas along the waterfront. Water edge areas were protected from wave action and erosion using local stone as rip rap. Steep slopes were stabilized with walls generally constructed using flat stacked bluestone or similar local stone materials. A great number of these walls were dry laid or constructed with a minimum amount of mortar. Shrubs and trees were maintained, planted, or allowed to grow in close proximity to the waterfront structures in sections surrounding the manmade waterfront features.

These manmade features have existed for many years. Over time many of the waterfront structures and features have begun to fail from normal land settlement, long term wave action, interference from nearby tree roots, and general weathering. Original trees have matured and many have been impacted by weather, disease, and insects.

The original camps and residences are now being purchased and restored, expanded, or rebuilt to modern standards. Homeowners also want to perform work along the lakefront to correct failing and unsafe conditions and/or generally upgrade the existing lakefront development for their anticipated recreational use.

Town of Cazenovia zoning regulations have established a 20 foot wide Critical Environmental Area (CEA) along the lakefront. Within this area, impervious surfaces (walls, walks, patios, steps, etc.) greater than 5% are not allowed. This leaves 95% of the shore front potentially available for the continuation or restoration of a natural or naturalistic waterfront. However, when areas surrounding the impervious landscape features are considered for residential use one can envision that an additional 20 to 25% of the CEA would be disturbed to some degree to re-establish lakefront features, integrate new structures or plantings into the site, and/or to create lake vistas.

Therefore, it is recommended that at least 70% of the residential lakefront zone should be maintained, restored, or re-established to have a natural or naturalistic character. Proposed residential improvements should be evaluated according to this goal.

In addition, on larger waterfront lots, consideration should be given by an applicant to extending, to the extent feasible, the area that would be maintained, restored, or re-established to have a natural or naturalistic character to a distance of 40 feet from the lake edge. However, on smaller existing developed lots, this desired 40 foot distance from the lake edge might not be achievable to maintain a functioning residential use.

Figure 1.1 – Critical Environmental Area (CEA)

Within this area impervious surfaces (walls, walks, patios, steps, etc.) greater than 5% are not allowed.

DEVELOPED LAKEFRONT: *HARDSCAPE*

All proposed wall construction shall be subject to Planning Board review and approval.

In order to maintain a natural or naturalistic visual character on Cazenovia Lake, the construction of modern lakefront walls (hardscape) are not considered an appropriate land use feature within the 20 foot wide CEA bordering the lake and/or within areas of the general zoning 100 foot wide development setback where lakefront slopes that are greater than 25% (1'vertical/4'horizontal) extend from the lake edge.

However, two exceptions may apply.

1. *Repair, stabilization, or replacement of an existing degraded or failing lakefront wall or manmade slope that has existed for more than 10 years.* In-situ wall stabilization or repair should be similar to the original in terms of materials, construction, and configuration. It is appropriate for a replacement of an existing failing or degraded wall to be restored in place, but if feasible, they should be installed using a stepped configuration (+/-2' to 3' height) that includes significant pockets for plantings when viewed from the lake.

2. *Implementation of manmade erosion control practices on slopes greater than 40% (1'vertical/2.5'horizontal).* While not desired, the use of manmade structures may be needed to stabilize eroding natural slopes in locations where existing plant growth is sparse or dominated by diseased species; contains structurally unsound trees; has highly invasive plants; or does not contain plant species with root structures that protect slope soils. Manmade structures may be constructed using stone rip rap, natural stone 'blocks', stone-filled gabions or precast concrete unit materials. Where precast concrete units are considered for use, highly uniform individual units should be avoided. Instead, units that function with a variable size and variable face configuration should be used. In addition, where feasible, they should be installed using a stepped configuration (+/-2' to 3' height) that includes significant pockets for plantings when viewed from the lake.

Cast in place concrete walls should be avoided. However, if needed to retain a lakefront edge or existing long-term lakefront development, such walls should have the face exposed to view from the lake built with a textural character.

When lakefront slope areas are flatter than 1' vertical to 2.5' horizontal within the CEA and/or within 40 feet of the lakefront, a dense growth of soil-holding plant materials should be installed to stabilize the slopes and provide natural or naturalistic visual character along the lakefront. In addition, should an applicant desire to do more with the planted slopes they may consider installation of large boulders or precast concrete units fitted into the slope in a configuration that presents the visual appearance of ledge rock outcrops, surrounded by plant growth, along the shoreline.

With any proposed construction involving lakefront walls, consideration should be given to the continuance and protection of existing trees, shrubs and groundcovers within the CEA and any adjacent steep slopes, in order to have these areas remain natural or naturalistic to 70% of the CEA and within 40 feet of the lake.

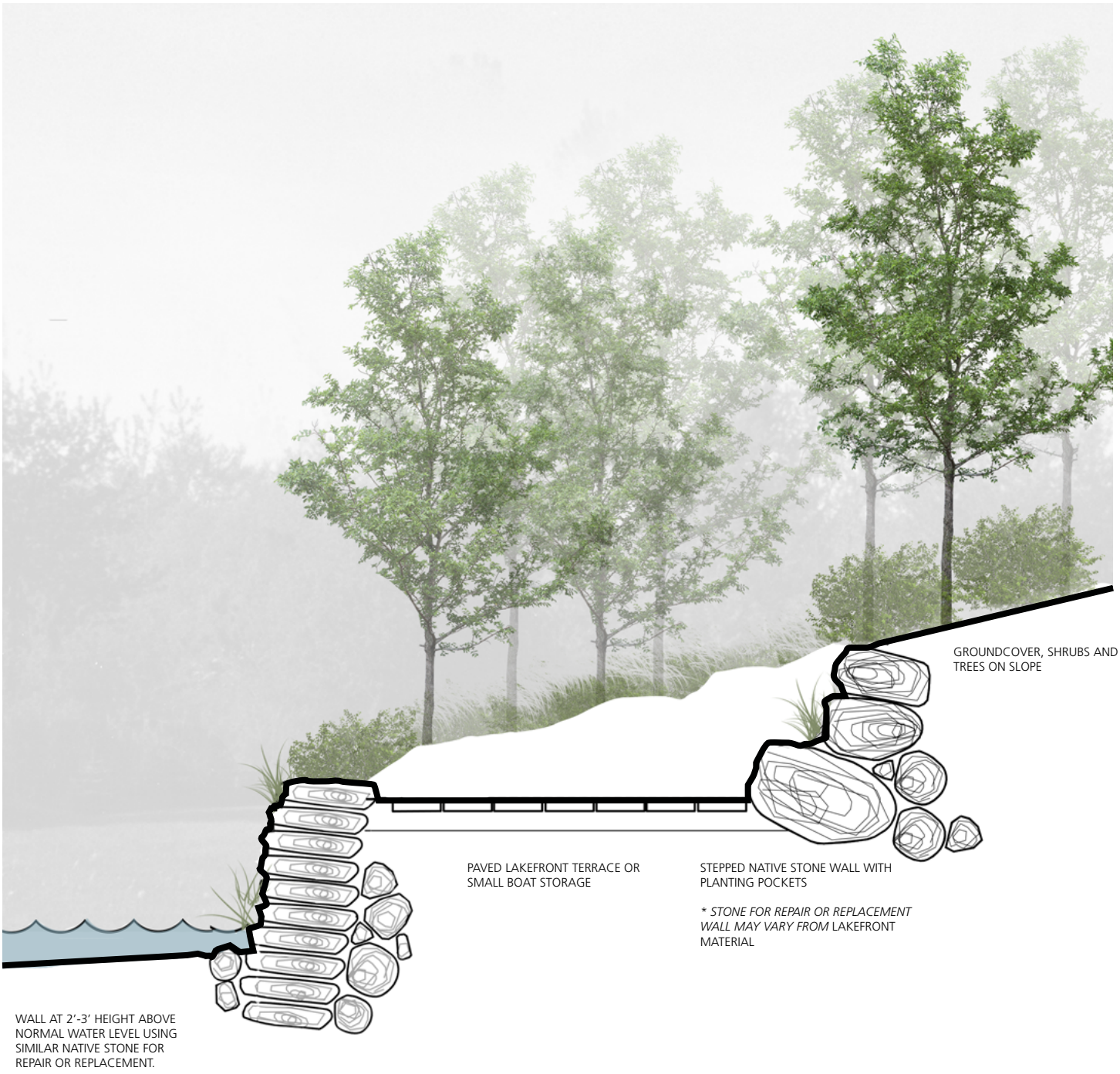

Figure 1.2

DISPLAY OF CHARACTER FOR EXISTING STONE WALL REPAIR OR REPLACEMENT IN DEVELOPED AREA

UNDEVELOPED LAKEFRONT: *HARDSCAPE*

All proposed construction shall be subject to Planning Board review and approval.

On lots bordering the lakefront that have not been previously developed, or on land subdivided from larger parcels that has not been part of previous development, proposals for the construction of permanent waterfront structures should not be considered unless required to prevent soil erosion. In these locations, existing site grades should be retained. Homeowner access to the waterfront and the construction of functioning lake edge recreational features should be achieved through the use of wood stairs and decks. This approach to lakefront development will limit or significantly reduce the need for land disturbance as wood structures can be designed to work with existing topography to achieve a homeowner's plan for waterfront recreation.

Should structures be needed to stabilize eroding slopes, vertical or near-vertical walls should not be used. In these locations plans for the construction of more natural appearing land features such as intermittent rock outcrops or ledge formations with planting pockets should be considered.

Wood stairs and deck construction will enable the residential development to support the continuance and protection of existing trees, shrubs and groundcovers within the CEA and any adjacent steep slopes.

In the case of lakefront locations where the ground surface is seasonally saturated and displays hydrophytic features, these areas should not be disturbed except for the installation of raised wood walks to gain access to the waterfront.

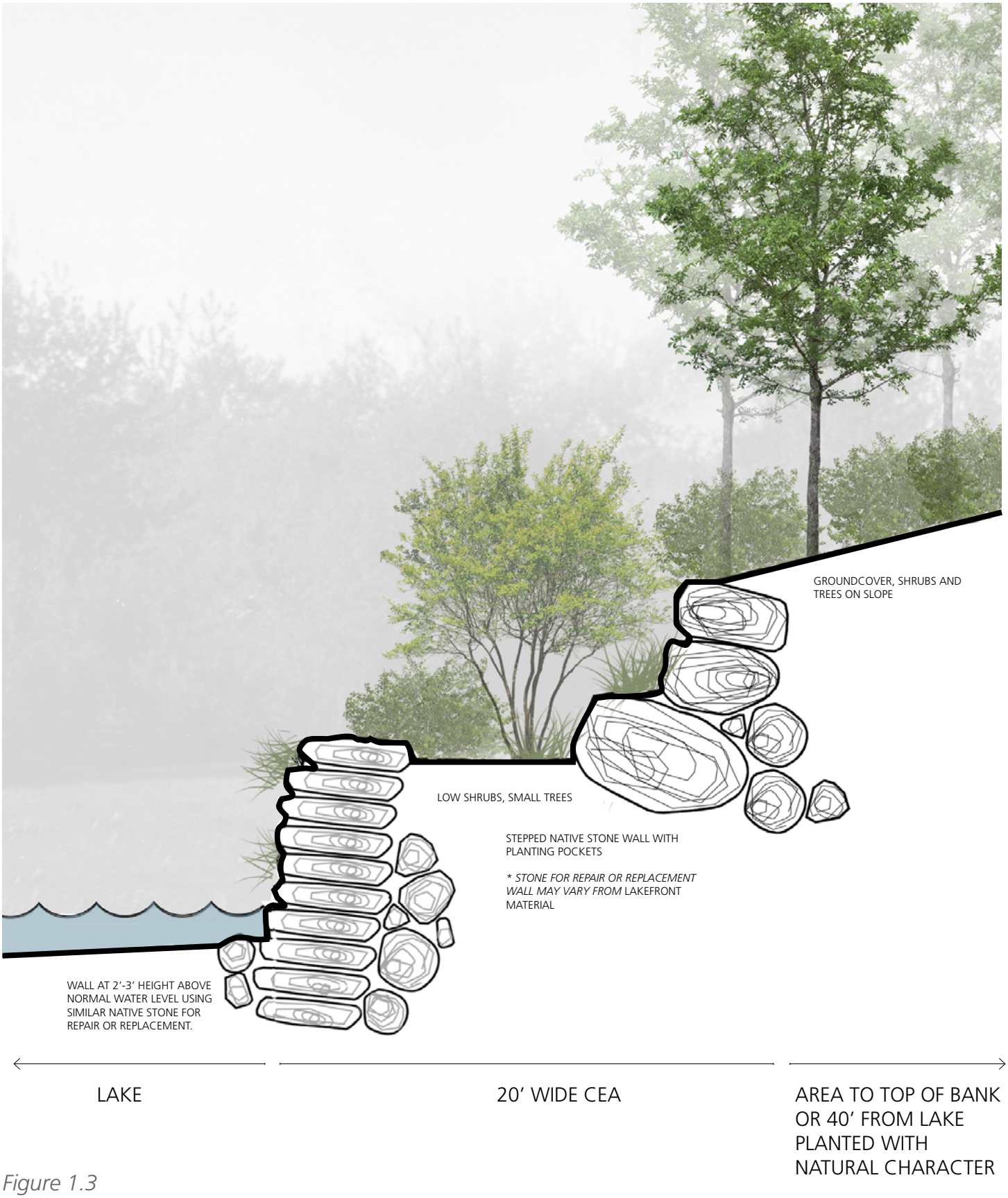

Figure 1.3

DISPLAY OF CHARACTER FOR EXISTING STONE WALL REPAIR OR REPLACEMENT IN AREA NOT DEVELOPED

LAKEFRONT PLANTING FOR DEVELOPED AND UNDEVELOPED PROPERTIES

DEVELOPED PROPERTIES:

Continuation of natural plant growth or establishment of similar naturalistic character plant growth along the lakefront of Cazenovia Lake is important to the maintenance of viable lakefront environment. Natural or naturalistic lakefront plant growth should be made up of vertical strata of plant species that include major deciduous and evergreen trees, minor (understory) trees, varied shrub layer, and soil-holding low growth or groundcovers.

The land disturbance regulations require that existing plant growth along the lakefront be maintained unless approved by the Planning Board. Therefore, wherever feasible, significant existing plant growth within 70% of the CEA and within 40 feet of the lakefront shoreline should be maintained by an applicant. In particular, this action is important within areas that display a dominance of native plant species. The Planning Board may authorize selective clearing, pruning and shaping of existing plants in a manner that maintains naturalistic character and is accomplished as part of good management practice for general plant growth in the area.

Clearing of existing stable and larger mature natural or naturalistic plant growth within the CEA for an applicant to achieve greater visibility to the lake should not be allowed. In locations where a viable vertical strata of existing plant growth is not present, when an applicant proposes activities within the CEA and within 40 feet of the lakefront, the goal should be achievement of the following minimum standards. Within the CEA this would consider planting of:

1. **One major tree (+/-40'-60' height) planted for every 10' of lakefront (2" Caliper minimum at time of planting)**
2. **One minor tree (+/-15'-20' height, minor tree) planted for every 20' of lakefront (+/-6'-7' Height at time of planting)**
3. **One evergreen tree (pine, spruce, cedar) planted for every 20' of lakefront (+/-6'-7' Height at time of planting)**
4. **Ten large shrubs (+/-6'-12' height) planted for every 100' of lakefront (+/-#5-#7 container or balled and burlaped at time of planting)**
5. **Thirty low growing shrubs (+/-1'-4' height) planted for every 100' of lakefront (+/-#3-#5 container at time of planting)**
6. **Dense soil holding woody or herbaceous groundcovers planted in other locations (flats, clumps, tublings, or seed)**

In locations where a vertical strata of existing mature plant growth is present in the CEA and within 40 feet of the lakefront, this existing plant growth may be used to meet or exceed the above noted standards. For example, where large trees are present, minor trees, shrubs, and groundcovers may be used to meet the goal for achieving the 70% natural or naturalistic landscape character.

Removal of existing healthy plant growth to achieve greater lake visibility -- and replacement of same with new plant growth -- is not considered appropriate and should only be considered on a case-by-case basis by the Planning Board. This is particularly important where such activity would remove native plant species. However, should a homeowner request that a large existing tree within the CEA or within 40 feet of the lakefront be removed, based upon it being structurally unsafe, badly disfigured by weather, or diseased or insect impacted, the tree should be replaced by three new major trees and one minor tree.

New plantings may be clustered or grouped in a configuration within the CEA to display a naturalistic character when viewed from the lake and to enable the applicant to have framed vistas of the lake from the residential property. As noted, at least 70% of the lakefront in the CEA on a lot shall be allowed to grow or be planted to establish a naturalistic character.

At least 75% of new plantings should be comprised of species native or long term indigenous (>100 years) to Central New York. Cultivars of these species may be used.

UNDEVELOPED PROPERTIES:

All proposed disturbance shall be subject to Planning Board review and approval.

On undeveloped wooded lakefront properties, existing trees, understory growth, and groundcovers should be maintained within the CEA across an area encompassing at least 70% of the waterfront.

Removal of existing, healthy plant growth to achieve lake visibility in not considered appropriate. However, as part of good management practices for general plant growth, selective clearing, pruning and shaping of existing plants may be authorized by the Planning Board on a case-by-case basis.

Within the CEA or within 40 feet of the lakefront, Planning Board approval is required to remove all existing plant growth that is deemed structurally unsafe, badly disfigured by weather, diseased, or insect-impacted as documented by a certified professional horticulturists or arborist. When this plant removal removes the wooded character of the lakefront, a planting replacement plan that conforms, in general to *The Lakefront Development Guidelines* should be proposed to and approved by the Planning Board.

Lakefront locations where the ground surface is seasonally saturated and displays vegetation with a dominance of hydrophytic features should not be disturbed except for the installation of raised wood walks to gain access to the waterfront (it should be noted that these low elevation fringe areas along the lake would most likely qualify as state or federal wetlands). Existing plant growth should remain essentially intact, including the remnants of fallen trees and other woody detritus, in order to continue the natural habitat features. Homeowner access to the lake should be limited and carefully configured and fitted into the lakefront landscape.

A plan for the removal of invasive species may be presented and should include a plan for the restoration of the wooded lakefront that conforms to the *Lakefront Development Guidelines*.

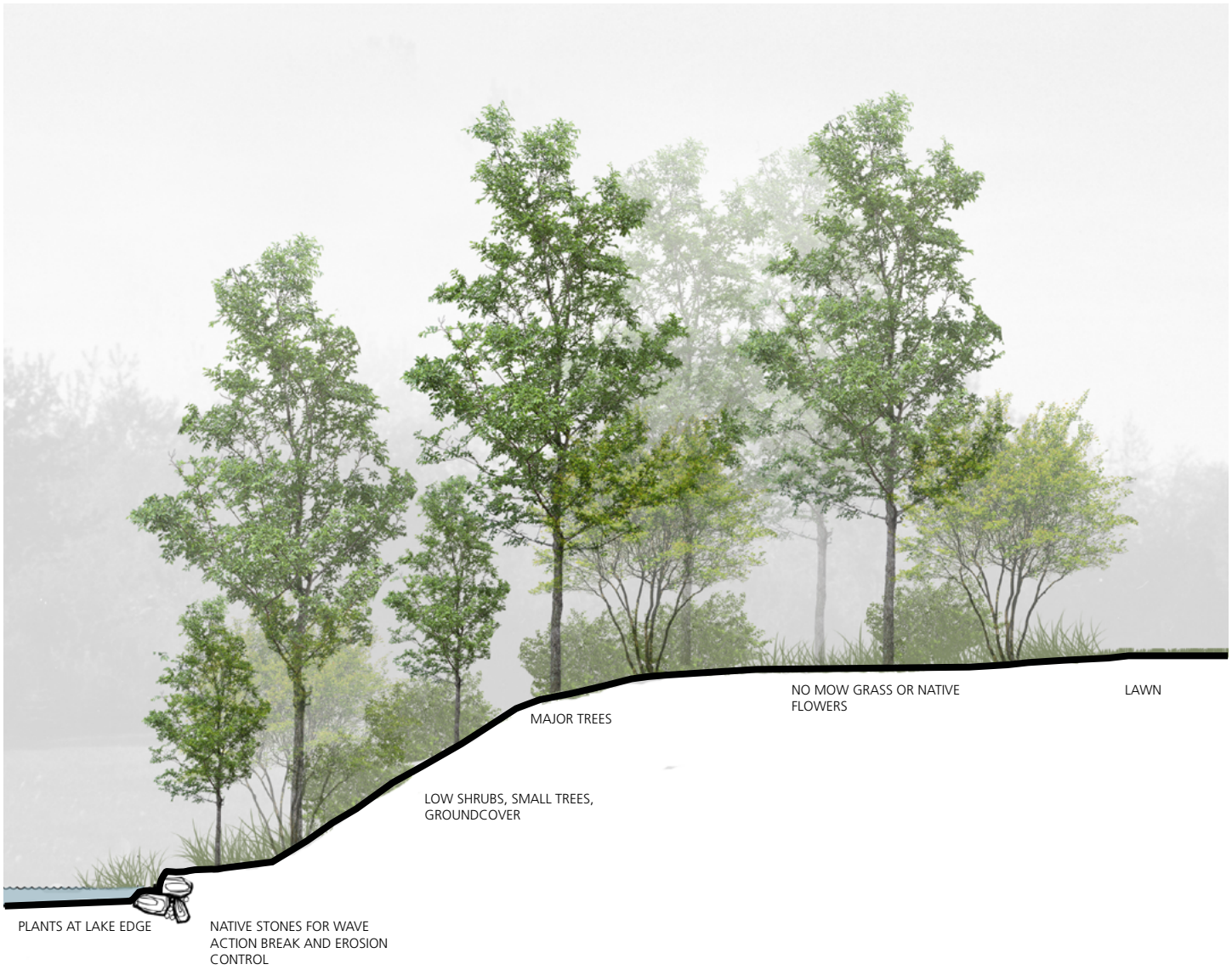

Figure 1.4

DISPLAY OF CHARACTER FOR LANDSCAPE AND STABILIZATION OF SLOPES ALONG LAKEFRONT

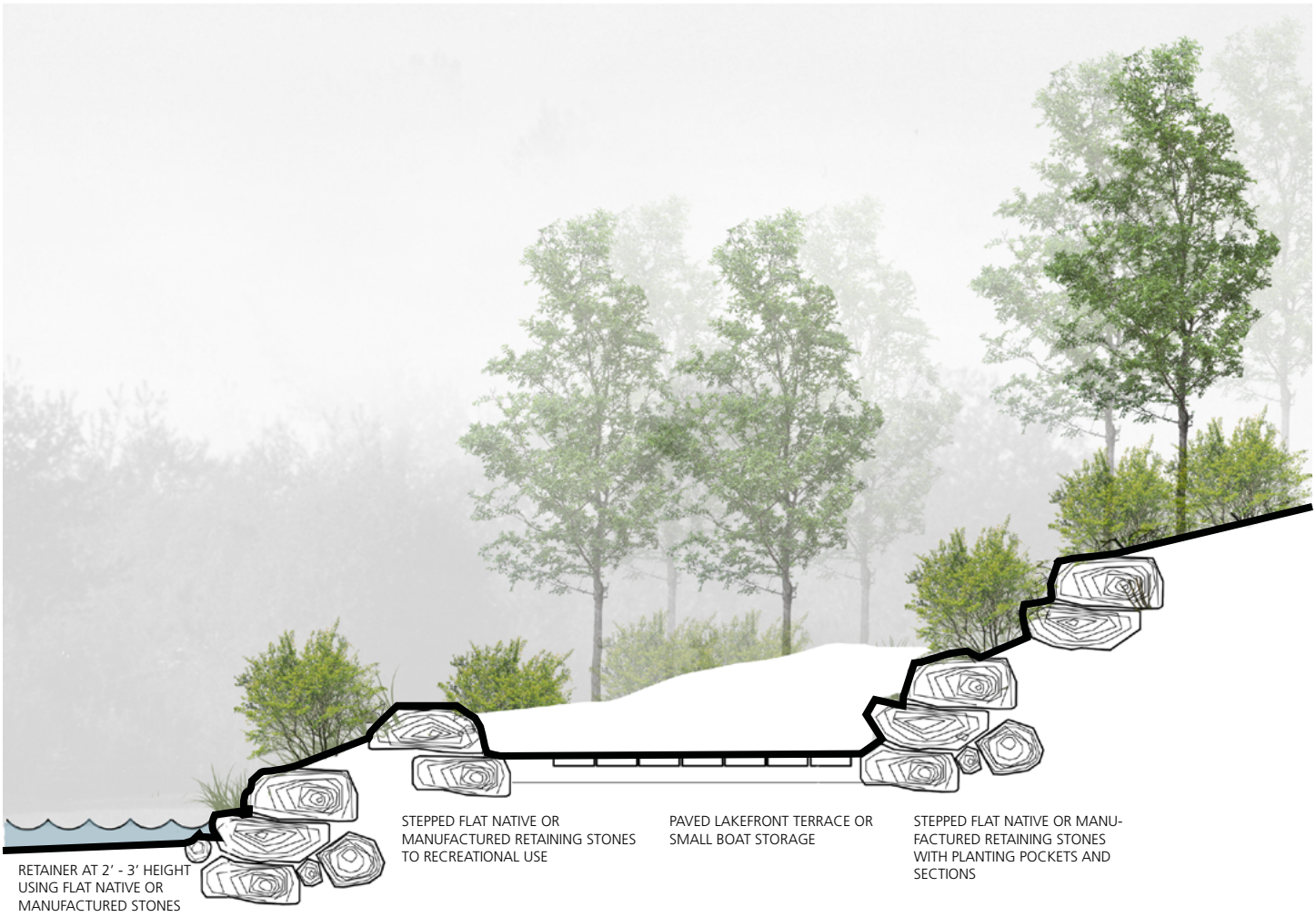

Figure 1.5

DISPLAY OF CHARACTER FOR REPLACEMENT WALL WHERE SLOPE STABILIZATION OF DEVELOPED LAKEFRONT IS NOT FEASIBLE.

Figure 1.6

DISPLAY OF SLOPE STABILIZATION WORKING WITH AND AROUND EXISTING PLANTS AND ADDING PLANTS

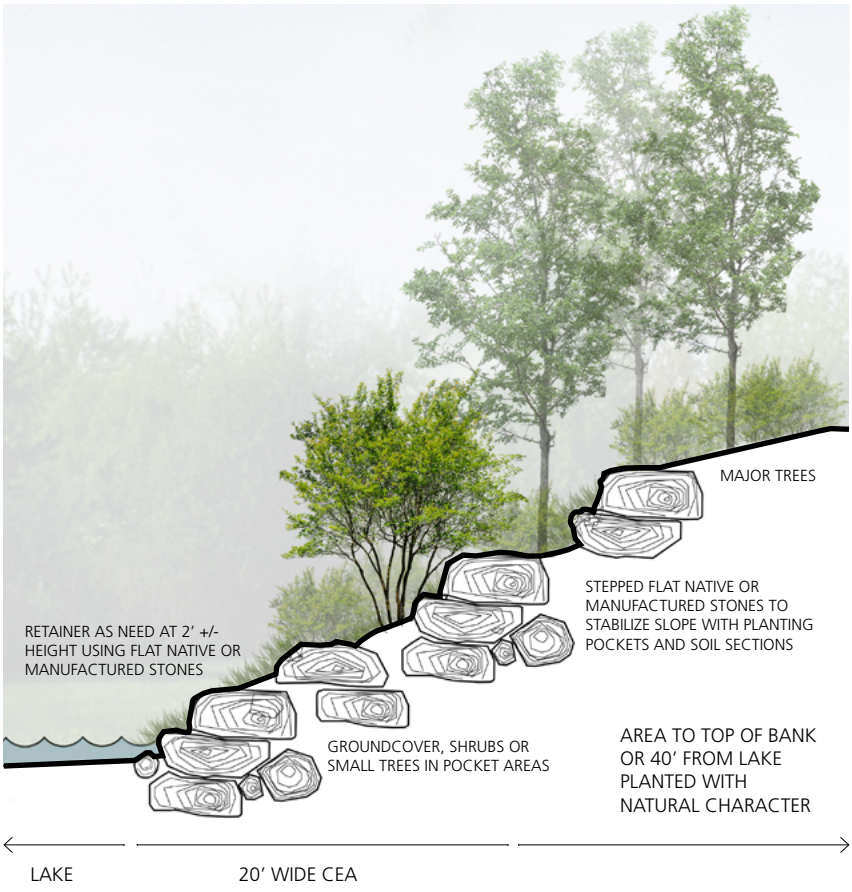

Figure 1.7

DISPLAY OF CHARACTER FOR EXISTING STONE WALL REPAIR OR USING GABION UNITS

NOTE: GABION FABRIC, TIES, LACING AND CONNECTING WIRES SHALL BE GALVANIZED WITH NOT LESS THAN 0.8 OUNCES PER SQUARE INCH.

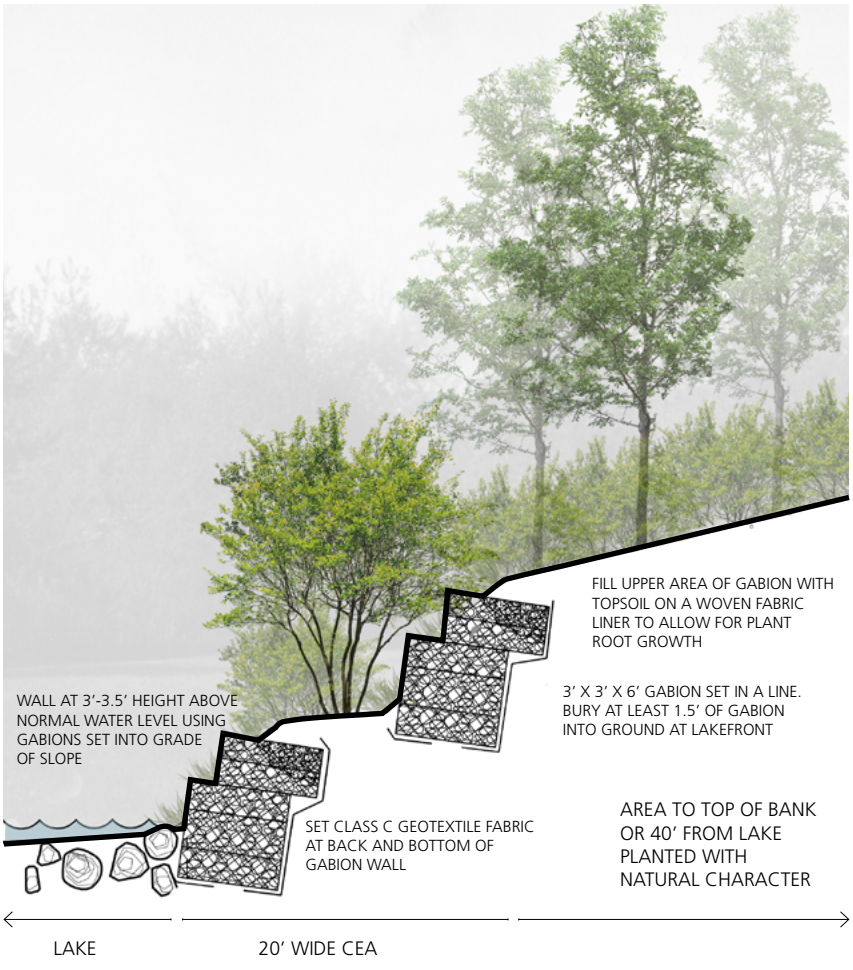

Figure 1.8

DISPLAY OF CHARACTER FOR STABILZATION OF SHORT STEEP SLOPE ALONG LAKEFRONT

CASE STUDY:
LAKEFRONT RESTORATION
(LAKESIDE PARK, CAZENOVIA)

Figure 1.9 – Lakefront 2006

Figure 1.10 – Lakefront 2007

Figure 1.11 – Lakefront 2008

Figure 1.12 – Lakefront 2013

APPENDIX:
PLANT LIST

All proposed planting shall be subject to Planning Board review and approval.

Native, long-term indigenous, introduced, and ornamental species are included.

A number of plant sources include seed suppliers for individual species or have prepared seed mixes for specific site conditions. In addition, a number of nurseries grow native and common indigenous plant species suitable for Cazenovia Lake in flats, tubelings, and small pots.

The following plant list contains species that are native to, commonly found in, or often have been planted in Central New York. The list is not all inclusive, as many other plant species exist in this area, but is provided as a basis for a homeowner to start a selection of plants that would result in the establishment of the desired vertical strata in the lakefront landscape.

The listed plants provide a wide range of options for the selection of planting in the CEA and within 40 feet of the lakefront. However, when selecting plants from the list, one should consider how each of the selected species will perform in association with one another and within the vertical strata of the Cazenovia Lake waterfront landscape. Sun and shade requirements, soil types and structure, growth habits, and water requirements must be considered to create a successful planting result. In addition, consideration should be given when selecting plant species as to how they grow in composition in the natural environment and as to what plant species are currently present on the property as well as on adjacent lands.

SEDGES, GRASSES, RUSHES, AND WILDFLOWERS

In addition to the plants noted, many groundcover, soil-holding plant species are appropriate for use in the CEA and adjacent locations. These include, but are not limited to, native and long-term present species such as Fox Sedge, Pennsylvania Sedge, Alleghany Sedge, Little Bluestem Grass, Indian Grass, Switch Grass, Prairie Dropseed, Canada Goldenrod, Grass Leafed Goldenrod, Joe Pye Weed, Boneset, Asters, Northern Sea Oats, Orchard Grass, Timothy, Soft Rush and a number of Fescue Grass species. In addition, nursery introduced species are often found planted in Central New York. These include, Japanese Garden Sedge, Ice Dance Sedge, Fountain Grass, etc. Further, hosts of low-growing, soil-holding wildflowers are also available for use in the CEA.

MAJOR DECIDUOUS TREES

Acer negundo . . . . . .Box elder
Acer rubrum . . . . . .Red Maple
Acer saccharinum . . . . . .Silver Maple
Acer saccharum . . . . . .Sugar Maple
Betula alleghaniensis . . . . . .Yellow Birch
Betual lenta . . . . . .Sweet, Black Birch
Betula nigra . . . . . .River Birch
Betula papyrifera . . . . . .Paper Birch
Betula populifolia. . . . . .Grey Birch
Carya cordiformis. . . . . .Bitternut Hickory
Carya ovata . . . . . .Shagbark Hickory
Celtis occidentalis . . . . . .Hackberry
Cladrastis kentukea . . . . . .Yellowwood
Fagus grandifolia . . . . . .American Beech
Gleditsia triacanthos . . . . . .Honeylocust
Gymnocladus dioicus . . . . . .Kentucky Coffeetree
Juglans nigra . . . . . .Black Walnut
Liquidambar styraciflua . . . . . .Sweetgum
Liriodendron tulipifera . . . . . .Tuliptree
Nyssa sylvatica . . . . . .Blackgum, Black Tupelo
Ostrya virginiana . . . . . .Eastern Hophornbeam
Plantanus occidentalis . . . . . .American Sycamore
Populus deltoides. . . . . .Eastern Cottonwood
Quercus alba . . . . . .White Oak
Quercus bicolor . . . . . .Swamp White Oak
Quercus coccinea. . . . . .Scarlet Oak
Quercus macrocarpa . . . . . .Bur Oak
Quercus imbricaria. . . . . .Shingle Oak, Laurel Oak
Quercus palustris . . . . . .Pin Oak
Quercus rubra . . . . . .Northern Red Oak
Quercus velutina . . . . . .Black Oak
Robinia pseudoacacia. . . . . .Black Locust
Salix spp. . . . . .Willow
Taxodium distichum . . . . . .Baldcypress
Tilia americana. . . . . .American Linden, Basswood
Tilia cordata. . . . . .Littleleaf Linden

EVERGREEN OR EVERGREEN LIKE

Abies balsamea . . . . . .Balsam Fir
Abies concolor. . . . . .White Fir
Abies fraseri. . . . . .Fraser Fir
Chamaecyparis pisifera . . . . . .Sawara False-Cypress
Juniperus virginiana . . . . . .Eastern Redcedar
Larix laricina. . . . . .Eastern Larch
Picea abies. . . . . .Norway Spruce
Picea glauca. . . . . .White Spruce
Picea omorika . . . . . .Serbian Spruce
Picea pungens (var. glauca) . . . . .Colorado Blue Spruce
Pinus strobus . . . . . .Eastern White Pine
Pinus sylvestris . . . . . .Scots Pine
Pinus flexilis . . . . . .Limber Pine
Pseudotsuga menziesii . . . . . .Douglas Fir
Thuja occidentalis . . . . . .Northern White-cedar
Thuja plicata . . . . . .Western Red Cedar
Taxodium distichum . . . . . .Baldcypress
Tsuga canadensis . . . . . .Eastern Hemlock
Tsuga caroliniana . . . . . .Carolina Hemlock

MINOR DECIDUOUS

Acer ginnala . . . . . .Amur Maple
Acer griseum . . . . . .Paperbark Maple
Acer palmatum . . . . . .Japanese Maple
Acer pensylvanicum . . . . . .Striped Maple
Alnus rugosa/incana. . . . . .Speckled Alder
Amelanchier spp. . . . . .Serviceberry, Shadblow
Betula populifolia. . . . . .Grey Birch
Carpinus caroliniana . . . . . .American Hornbeam, Ironwood
Cercis canadensis. . . . . .Redbud
Chiionanthus virginicus . . . . . .Fringetree
Cornus alternifolia . . . . . .Alternate Leaf Dogwood
Cornus florida . . . . . .Flowering Dogwood
Cornus kousa . . . . . .Kousa Dogwood
Crataegus spp.. . . . . .Hawthorn
Magnolia stellata . . . . . .Star Magnolia
Magnolia x soulangiana . . . . . .Saucer Magnolia
Malus spp.. . . . . .Apple/Crabapple
Prunus spp. . . . . .Flowering Cherries
Ptelea trifoliata. . . . . .Hoptree, Wafer-ash
Rhus typhina . . . . . .Staghorn Sumac
Salix spp. . . . . .Willow Species
Sassafras albidum . . . . . .Sassafras
Syringa reticulata . . . . . .Japanese Tree Lilac

SHRUBS (LARGE)

Aesculus parviflora. . . . . .Bottlebrush Buckeye
Aronia arbutifolia. . . . . .Red Chokeberry
Aronia melanocarpa. . . . . .Black Chokeberry
Buxus sempervirens . . . . . .Boxwood
Cephalanthus occidentalis . . . . . .Buttonbush
Clethra alnifolia . . . . . .Summersweet
Cornus amomum. . . . . .Silky Dogwood
Cornus mas . . . . . .Corneliancherry Dogwood
Cornus racemosa. . . . . .Gray Dogwood
Cornus stolonifera . . . . . .Red-osier Dogwood
Cotinus coggygria . . . . . .Smokebush
Forsythia spp.. . . . . .Forsythia
Hamamelis virginiana. . . . . .Witchhazel
Hamamelis vernalis . . . . . .Witchhazel
Hibiscus syriacus . . . . . .Rose-of-Sharon
Hydrangea paniculata . . . . . .Panicle Hydrangea
Hydrangea quercifolia . . . . . .Oakleaf Hydrangea
Ilex glabra . . . . . .Inkberry
Ilex x meserveae. . . . . .Blue Holly
Ilex verticillata . . . . . .Winterberry
Lindera benzoin . . . . . .Spicebush
Myrica (Morella) pensylvanica. . . .Northern Bayberry
Philadelphus coronarius . . . . . .Osage Orange
Physocarpus opulifolius . . . . . .Ninebark
Sambucus canadensis . . . . . .Elderberry
Spiraea vanhouttei. . . . . .Vanhoutte Spirea
Staphylea trifolia . . . . . .Bladdernut
Symphoricarpos albus . . . . . .Snowberry
Syringa vulgaris . . . . . .Lilac
Vaccinum corymbosum . . . . . .Highbush Blueberry
Viburnum cassinoides . . . . . .Witherod Viburnum
Vivurnum trilobum. . . . . .Cranberrybush Viburnum

SHRUBS (LOW) AND GROUNDCOVERS

Arctostaphylos uva-ursi . . . . . .Bearberry
Cotoneaster spp. . . . . .Cotoneaster Species
Fothergilla gardenii . . . . . .Fothergilla
Hypericum prolificum. . . . . .Shrubby St. John's Wort
Juniperus spp. . . . . .Juniper Species
Pachysandra procumbens. . . . . .Alleghany Spurge
Pachydandra terminalis . . . . . .Pachysandra
Paxistima canbyii . . . . . .Ratstripper
Potentilla fruticosa . . . . . .Potentilla
Prunus pumila pumila . . . . . .Great Lakes Sand Cherry
Rhus aromatica 'Gro Low' . . . . . .Fragrant Sumac
Juniperus spp. . . . . .Juniper Species
Microbiota descussata . . . . . .Russian Arborvitae
Viburnum acerifolium . . . . . .Mapleleaf Viburnum
Vinca minor . . . . . .Myrtle

FERNS

Matteucia struthiopteris. . . . . .Ostrich Fern
Onoclea sensibilis. . . . . .Sensitive Fern
Osmunda laytoniana . . . . . .Interrupted Fern
Polystichum acrostichoides . . . . .Christmas Fern
Pteridium aquilinum. . . . . .Bracken Fern
Thelypteris noveboracensis. . . . . .New York Fern