

A COASTAL PLANTING GUIDE

FOR THE VILLAGE OF MAMARONECK, NY

MAY 2014



A Coastal Planting Guide for the Village of Mamaroneck
 (Checklist for Village Staff, Boards, Commissions and the Public)

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Introduction: *The Benefits of Coastal Plantings*

Coastal landscaping can provide a diverse range of ecological, sociological, and economic benefits to a community. Advantages of aquatic buffers can include the following:

Flood Control

A coastal buffer can slow the speed of surface flow and reduce storm water runoff by promoting infiltration.

Erosion Prevention

Aquatic buffers slow the surface flow and can reduce the negative effects of erosion by stabilizing banks. Unplanted, and compacted soil adjacent to waterways contributes to increased run-off by providing less opportunity for the uptake of storm water. Erosion contributes to property loss and destroyed habitats.

Water Quality Improvement

Increased amounts of shallow groundwater is a benefit to water quality that coastal plants provide. In addition, pollutants and sediment can be absorbed by the filtering qualities of vegetation.

Ecosystem and Wildlife Habitat Protection

Establishing and protecting aquatic buffers can help maintain important plant populations while providing an ecosystem that is critical for wildlife habitation and migration corridors. Natural environments such as this provide multiple benefits to human well-being as well.

Aesthetic Enhancement

Coastal plants can provide aesthetic value to communities by offering scenic value, increasing adjacent property values, providing recreational and educational opportunities, creating a visual and sound buffer, requiring less maintenance, contributing organic matter, and providing a source of food and energy for the aquatic ecosystem.

How to Determine Feasibility and Appropriateness of a Planting Plan:

This guide is intended to aid the Village of Mamaroneck Planning Board and related entities in their decision making process regarding landscaping requirements in the Coastal zone. The Coastal zone is variable and is difficult to review unless the applicable site conditions are known and fully understood. Not only is flooding an issue, when it comes to plantings, the degree to which the water contains salt is an even more important predictor of survival. There are several other factors to be considered before a planting plan can be regarded “adequate”. Following is a list of questions that should be asked to determine the adequacy of a planting plan in the coastal zone of Mamaroneck. An effort has been made to list these questions in order of importance – a simple decision making tree and reference lists are attached (see Appendices 1 – 4).

1) Location

- a) Is the project site located in a **designated “zone”** (Coastal, Flood, Critical Area, Regulated Wetlands)?
If so, it will be important to understand the predicted flooding frequency and duration, the reason why an area is of “critical” importance (for wildlife for example) and/or, if the area is regulated under village, state or federal regulations.
- b) Is the site **“tidal”**?
If so, are critical tidal elevations known, such as: Mean Low water, Mean High Water, High High Water?
- c) What is the **water quality** like?
Is the water saline, brackish or fresh?
- d) What kind of **physical forces** govern the site?
Is the site exposed to wind, waves, boat wakes, and currents; is it shaded or sunny?
- e) What **substrate** dominates the site? Are there natural, virgin soils or has the site previously been filled (if so what does the fill material look like? Can it support plant growth); where is the ground water table in relation to the surface?
- f) How does the **topography** look like?
Is the site flat, does it have depressions, does it slope, and does it have structures such as a sea wall that creates an abrupt step?

- g) What is the **character of the landscape** like?
Is this a marsh? A dune? A woodland? A stand of invasive “weeds”? If there is no vegetation, why so?
- h) Has there been a **previous application** for this site?
What is the prior experience at this site? Has there been a success or a failure of a planting plan before? If so, are the reasons known?

2) Existing Wetland Regulations

- a) Does the proposed planting plan impact on an existing **local wetland** regulated under Chapter 192. FRESHWATER WETLANDS?
- b) Does the proposed planting plan impact on an existing **local wetland buffer** regulated under Chapter 192. FRESHWATER WETLANDS?
- c) Do local **Right-Of-Way** easements exist?
Determine if any public or private right-of-way or easement crosses or abuts property. Plantings should not obstruct rights-of-way or easements or infringe on public property or adjacent private property without written permission.
- d) Are there potentially **Local Waterfront Revitalization Policy** concerns that the Harbor and Coastal Zone Commission needs to review?
Issues that could arise may stem from concerns for wildlife habitat, erosion control, water quality, historical preservation and aesthetics.

Is the planting plan required by or consistent with the provisions of Articles 24 (Freshwater Wetlands act) and 25 (Tidal Wetlands act) of the Environmental Conservation Law of the State of New York, coastal consistency regulations (DOS), federal wetlands regulations administered through the Army Corps of Engineers and the Endangered Species Act administered by the Fish and Wildlife Service and NOAA?

3) Invasive Species Concerns

- a) **Avoidance** (purchased material – see attached reference Table A)
This is a moving target of an issue, in particular when it comes to determining if a plant or animal should be considered “invasive”. There is a very short list of so-called “nuisance” plants and animals that are officially targeted by the state for eradication. Beyond that there are several lists that can be consulted, each differing slightly based on the geographical area of most concern. A good example that is applicable for the Village of Mamaroneck, is the Japanese or Beach Rose (*Rosa rugosa*), which thrives in coastal dunes and is often planted there. New York state lists do not mention the plant as invasive, however in Connecticut the species is considered “potentially invasive”. Given the proximity to Connecticut’s dunes and ecosystems, designers of planting plans in the Village of Mamaroneck should be advised that this plant could potentially become invasive. The Planning Board should therefore recommend caution when planting this rose in the Village.
- b) **Elimination** of Existing Invasive Species (see attached reference Table B)
Some species, such as the Common Reed (*Phragmites australis*) or Porcelain Berry (*Ampelopsis brevipedunculata*) will be obvious targets for elimination as they can dominate a project site to the detriment of all other plant species. Each application will need to be considered individually, since there can also be drawbacks from the elimination of invasive species from a project site that may outweigh the obvious benefits. Negative side effects from the elimination of invasive plants can result in the disturbance or destruction of desirable native flora (and/or fauna) , reduction of biodiversity, unforeseen changes in the aesthetics of a project site, or the possible undermining and destabilizing of a bank or dune. Where serious doubts about the benefits of invasive species removal exist, any desirable new plantings may have to be foregone or moved to an off-site location.

4) Suitable Plant Material and Planting Guidelines

The coastal environment creates conditions where only the hardiest of plants can survive. Particular native species have survived and thrived in this environment for thousands of years and are therefore the obvious choice for planting. The plants on the appended lists have been selected for their ability to tolerate conditions found in coastal areas, such as parched sandy soils, wind, occasional flooding, occasional storm waves, and salt spray. The selection favors plants that are typically available in the nursery trade. If applicable, properties should be graded to direct storm water away from the shoreline and toward planted areas to reduce erosion of banks and to prevent contaminants from entering Mamaroneck Harbor and Long Island Sound.

The following references are attached:

- a) Intertidal salt marsh, Table C
- b) Intertidal brackish marsh, Table D
- c) Freshwater marsh, Table E
- d) Infrequently flooded salt-tolerant tidal marsh edge, Table F
- e) Dune plantings, Table G
- f) Freshwater upland vegetation, Table H
- g) General planting guidelines (timing, soils, maintenance), Appendix 4

Appendix 1

Decision-making Tree to Determine Suitability of Planting Plans for Coastal Plantings in the Village of Mamaroneck

- 1) Is the project site located within Village regulated areas (e.g. less than 100 feet from the harbor, Long Island Sound or tidal creek, or within designated “Critical Environmental areas”)? *

YES – go to item 3

NO – Applicants may benefit from reviewing the reference planting lists, especially if dune plantings are desired or if the property is located in a designated flood zone.

- 2) Is the project site located within State or Federally regulated areas (e.g. within 300 feet of Long Island Sound or tidal creek) but outside of Village regulated areas?

YES – Regulatory agencies other than the Village of Mamaroneck may impose permit conditions on planting plans.

NO – Applicants may benefit from reviewing the reference planting lists, especially if dune plantings are desired or if the property is located in a designated flood zone.

- 3) Is the project site located within a delineated wetland area or 100-foot wetland buffer zone?

YES – Chapter 192. FRESHWATER WETLANDS of the Village of Mamaroneck Code does apply – prepare landscape plans considering predominant environmental conditions as follows (see appended Tables C-H for recommended plant lists) and go to items 4 and 5:

- a) Table C) Intertidal Salt Marsh (Page A3-1)
- b) Table D) Intertidal Brackish Marsh (Page A3-1)
- c) Table E) Freshwater Marsh (Page A3-1)
- d) Table F) Infrequently Flooded Salt-tolerant Tidal Marsh Edge (Page A3-2)
- e) Table G) Dune plantings (Page A3-3)
- f) Table H) Upland Vegetation, NO Salt Spray, Fresh Groundwater ONLY (Page A3-4)

NO – If the project site is not a “wetland/buffer”, but located in or adjacent to a “Critical Environmental Area” planting plans may need to reflect the particular environmental conditions for which the area has been recognized.

Continued on the following page

4) Does the project site have seawalls, bulkheads, steep slopes or man-made fill?

YES – Check soil and flooding conditions landward of man-made feature. Walls and fill may abruptly separate a wetland from the upland without providing “buffer” functions. Planting conditions may not fall into the categories listed above – special conditions may apply that warrant extra preparation (soil amendments, etc.) and maintenance (watering, weeding, etc.).

NO – Please consult 3(a) through 3(f) above

5) Does the project site have established invasive vegetation?

YES – Check Appendix 2, Table B for particularly troublesome invasive plant species. Elimination procedures vary from species to species – the Internet is generally a good resource for effective methods. Table B indicates potential elimination methods.

NO – Keep it that way and avoid planting potentially invasive species. Appendix 2, Table A makes an attempt to guide the applicant. New lists are constantly emerging on the Internet and existing ones are being updated (e.g. National Invasive Species Information Center: <http://www.invasivespeciesinfo.gov/plants/main.shtml>; Interim List of Invasive Plant Species in New York State: <http://www.dec.ny.gov/animals/65408.html>; Connecticut Invasive Plant Council: <http://www.invasive.org/weeds/invplantsCT10sciname.pdf>).

Note:* This decision-making tree focuses on local laws only. State and Federal regulations may be more or less stringent.

Attachment to “A Coastal Planting Guide for the Village of Mamaroneck”

Appendix 2

Species Avoidance Lists

Table A) Avoidance of Invasive Species on Landscaping Plans*

Common Name	Scientific Name	Charakter
Amur maple	<i>Acer ginnala</i>	mid-size tree
Norway maple	<i>Acer platanoides</i>	tall tree
Sycamore maple	<i>Acer pseudoplatanus</i>	tall tree
Glossy buckthorn	<i>Frangula alnus</i>	short tree
Princesstree	<i>Paulownia tomentosa</i>	tall tree
White poplar	<i>Populus alba</i>	tall tree
European buckthorn	<i>Rhamnus cathartica</i>	short tree
Black locust	<i>Robinia pseudoacacia</i>	tall tree
Indigobush	<i>Amorpha fruticosa</i>	shrub, thicket-forming
Japanese barberry	<i>Berberis thunbergii</i>	short shrub
Common barberry	<i>Berberis vulgaris</i>	short shrub
Russian olive	<i>Elaeagnus angustifolia</i>	shrub, thicket-forming
Autumn olive	<i>Elaeagnus umbellata</i>	shrub, thicket-forming
Winged burning bush	<i>Euonymus alatus</i>	mid-size shrub
Border privet	<i>Ligustrum obtusifolium</i>	tall shrub
California privet	<i>Ligustrum ovalifolium</i>	tall shrub
European privet	<i>Ligustrum vulgare</i>	tall shrub
Amur honeysuckle	<i>Lonicera maackii</i>	mid-size shrub
Morrow's honeysuckle	<i>Lonicera morrowii</i>	mid-size shrub
Tatarian honeysuckle	<i>Lonicera tatarica</i>	mid-size shrub
Showy fly honeysuckle	<i>Lonicera x bella</i>	mid-size shrub
Dwarf honeysuckle	<i>Lonicera xylosteum</i>	mid-size shrub
Multiflora rose	<i>Rosa multiflora</i>	tall shrub
Seaside rose	<i>Rosa rugosa Thunb.</i>	short shrub
Wine raspberry	<i>Rubus phoenicolasius</i>	short shrub
Porcelain-berry	<i>Ampelopsis brevipedunculata</i>	tall woody vine
Oriental bittersweet	<i>Celastrus orbiculatus</i>	tall woody vine
Japanese hop	<i>Humulus japonicus</i>	fast-growing annual vine
Japanese honeysuckle	<i>Lonicera japonica</i>	ground covering vine
Flowering-rush	<i>Butomus umbellatus</i>	flowers, grass-like
Ground ivy	<i>Glechoma hederacea</i>	ground cover
Dames rocket	<i>Hesperis matronalis</i>	flowers
Himalayan balsam	<i>Impatiens glandulifera</i>	flowers

Table A – continued from previous page

Yellow iris	<i>Iris pseudacorus</i>	flowers
Creeping yellow loosestrife	<i>Lysimachia nummularia</i>	ground cover
Garden loosestrife	<i>Lysimachia vulgaris</i>	flowers
Purple loosestrife	<i>Lythrum salicaria</i>	flowers
True forget-me-not	<i>Myosotis scorpioides</i>	flowers
Onerow yellowcress	<i>Nasturtium microphyllum</i>	culinary herb
Chinese silvergrass	<i>Miscanthus sinensis</i>	grass
Reed canarygrass	<i>Phalaris arundinacea</i>	grass
Common reed	<i>Phragmites australis</i>	tall grass
Canada bluegrass	<i>Poa compressa</i>	grass

Note: * Please note that plants listed in Table B are also to be avoided.

Table B) Invasive Species Recommended for Elimination**

Common Name	Scientific Name	Removal Method
Tree-of-heaven	<i>Ailanthus altissima</i>	physical removal/herbicide
Garlic Mustard	<i>Alliaria petiolata</i>	physical removal
Porcelain Berry	<i>Ampelopsis brevipedunculata</i>	physical removal/herbicide
Common Wormwort	<i>Artemisia vulgaris</i>	mowing/herbicide
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	physical removal/herbicide
Japanese Hops	<i>Humulus japonicus</i>	physical removal
Bush honeysuckles	<i>Lonicera spp.</i>	physical removal
Purple Loosestrife	<i>Lythrum salicaria</i>	physical removal
Japanese Stiltgrass	<i>Microstegium vimineum</i>	physical removal
Common Reed	<i>Phragmites australis</i>	mowing/herbicide
Japanese Knotweed	<i>Polygonum cuspidatum</i>	mowing/herbicide
Mile-a-Minute Vine	<i>Polygonum perfoliatum</i>	physical removal
Wineberry	<i>Rubus phoenicolasius</i>	physical removal
Black Locust	<i>Robinia pseudoacacia</i>	physical removal

Note: **The species listed here are the most commonly encountered invasive species in the Village of Mamaroneck and surrounding communities. If any of the species listed in Table A are encountered, elimination should be considered whenever feasible.

Attachment to “A Coastal Planting Guide for the Village of Mamaroneck”

Appendix 3

Species Recommendation Lists

These lists mention only plants that are generally available in the nursery trade of the North-eastern United States.

Table C) Intertidal Salt Marsh

Common Name	Scientific Name	Character
Low marsh cordgrass	<i>Spartina alterniflora</i>	grass

The vegetated tidal wetland zone generally occurs between average sea level and mean high tide elevation in saline waters.

Table D) Intertidal Brackish Marsh

Common Name	Scientific Name	Character
Common three square	<i>Scirpus pungens</i>	grass-like
Saltmarsh bulrush	<i>Saltmarsh bulrush</i>	grass-like
Tall cordgrass	<i>Spartina cynosuroides</i>	grass – very tall
Prairie cordgrass	<i>Spartina pectinata</i>	grass – can get tall
Narrow-leafed cattail	<i>Typha angustifolia</i>	grass-like, very tall

A vegetated tidal wetland zone lying generally around the mean high tidal elevation in brackish waters.

Table E) Freshwater Marsh

Common Name	Scientific Name	Character
Sweet flag	<i>Acorus americanus</i>	grass-like
Swamp milk weed	<i>Asclepias incarnata</i>	flowers
Spike-rush*	<i>Eleocharis spp.</i>	typically very small, grass-like
Spotted joe-pye weed **	<i>Eupatorium maculatum</i>	flowers
Sneeze weed	<i>Helenium autumnale</i>	flowers
Rose mallow	<i>Hibiscus moscheutos</i>	flowers
Blue flag iris	<i>Iris versicolor</i>	flowers
Common rush	<i>Juncus effuses</i>	stays short, grass-like
Rice cutgrass	<i>Leersia oryzoides</i>	stays short, grass-like
Arrow arum	<i>Peltandra virginiana</i>	stays short
Pickereel weed	<i>Pontederia cordata</i>	flowers, stays short
Common arrowhead	<i>Sagittaria latifolia</i>	flowers, stays short
American bur-reed	<i>Sparganium americanum</i>	stays short, grass-like
Broadfruit bur-reed	<i>Sparganium eurycarpum</i>	can get tall, grass-like
Soft stemmed bulrush	<i>Scirpus validus</i>	can get tall, grass-like
Broad-leaved cattail***	<i>Typha latifolia</i>	tall, grass-like

Table E – continued from previous page

Notes:

- * various species available in the nursery trade
- ** various other Eupatorium species also available in the nursery trade.
- *** rarely available on the nursery trade

The Freshwater marsh is found primarily in the upper tidal limits and in non-tidal upland areas. It distinguishes itself from other “freshwater wetlands” through the absence of trees and shrubs, generally displaying an open character.

Table F) Infrequently Flooded Salt-tolerant Tidal Marsh Edge

Common Name	Scientific Name	Character
Groundsel bush	<i>Baccharis halimifolia</i>	mid-size shrub, spectacular seed display
Spike grass	<i>Distichlis spicata</i>	grass, short
Marsh elder	<i>Iva frutescens</i>	small shrub
Black grass	<i>Juncus gerardi</i>	grass-like, short
Seaside lavender	<i>Limonium carolinianum</i>	flowers, difficult to obtain and establish
Common three square	<i>Scirpus pungens</i>	grass-like, tall
Salt meadow grass	<i>Spartina patens</i>	grass, short

This is the upper most marine tidal wetland zone.

Attachment to “A Coastal Planting Guide for the Village of Mamaroneck”

Species Recommendation Lists, continued:

Table G) Dune plantings

Common Name	Scientific Name	Character
<i>At the exposed or front of the dune the following plants typically grow:</i>		
Beach grass	<i>Ammophila brevigulata</i>	grass
Bitter panic grasstall	<i>Panicum amarum</i>	grass, potentially tall
Switch grass	<i>Panicum virgatum</i>	grass, potentially tall
Seaside goldenrod	<i>Solidago sempervirens</i>	flowers
<i>At the sheltered backside of the dune the following plants typically grow:</i>		
Broom sedge	<i>Andropogon virginicus</i>	grass
Bearberry	<i>Arctostaphylos uva-ursi</i>	short shrub
Common milkweed	<i>Asclepias syriaca</i>	flowers, can form large stands
Butterfly weed	<i>Asclepias tuberosa</i>	flowers, short
Pennsylvania sedge	<i>Carex pensylvanica</i>	grass-like, short
Common hair grass	<i>Deschampsia flexuosa</i>	grass
Late boneset	<i>Eupatorium hyssopifolium</i>	flowers, may be difficult to find
Flat-topped goldenrod	<i>Euthamia tenuifolia</i>	flowers
False beach heather	<i>Hudsonia tomentosa</i>	short shrub
Bayberry	<i>Myrica pensylvanica</i>	tall shrub
Prickly Pear Cactus	<i>Opuntia humifusa</i>	flowers, very short
Switch grass	<i>Panicum virgatum</i>	grass, potentially tall
Beach plum	<i>Prunus maritima</i>	mid-sized shrub
Winged sumac	<i>Rhus copallinum</i>	tall shrub
Little bluestem	<i>Schizachyrium scoparium</i>	grass
Common goldenrod	<i>Solidago canadensis</i>	flowers, can form large stands
Wrinkled-leaved goldenrod	<i>Solidago rugosa</i>	flowers
Indian grass	<i>Sorghastrum nutans</i>	grass
White heath aster	<i>Symphotrichum ericoides</i>	flowers
New England aster	<i>Symphotrichum novae-angliae</i>	flowers

Attachment to “A Coastal Planting Guide for the Village of Mamaroneck”

Table H) Upland Vegetation, NO Salt Spray, Fresh Groundwater Only, Flood tolerance varies

Trees:	
Red Maple (<i>Acer rubrum</i>)	Black Tupelo (<i>Nyssa sylvatica</i>)
Sugar Maple (<i>Acer saccharum</i>)	White Pine (<i>Pinus strobus</i>)
Gray birch (<i>Betula populifolia</i>)	Black Cherry (<i>Prunus serotina</i>)
Shagbark Hickory (<i>Carya ovata</i>)	White Oak (<i>Quercus alba</i>)
Hackberry (<i>Celtis occidentalis</i>)	Blackjack Oak (<i>Quercus marilandica</i>)
American Beech (<i>Fagus grandifolia</i>)	Northern Red Oak (<i>Quercus rubra</i>)
Eastern Red Cedar (<i>Juniperus virginiana</i>)	American Basswood (<i>Tilia americana</i>)
Shrubs and Small Trees:	
Shadbush (<i>Amelanchier arborea</i>)	Beach plum (<i>Prunus maritima</i>)
Canadian serviceberry (<i>Amelanchier canadensis</i>)	Scrub Oak (<i>Quercus ilicifolia</i>)
Red Chokeberry (<i>Aronia arbutifolia</i>)	Pinxter Azalea (<i>Rhododendron periclymenoides</i>)
Black chokeberry (<i>Aronia melanocarpa</i>)	Swamp Azalea (<i>Rhododendron viscosum</i>)
Sweet Pepper Bush (<i>Clethra alnifolia</i>)	Dwarf Sumac (<i>Rhus copallina</i>)
Flowering Dogwood (<i>Cornus florida</i>)	Pasture Rose (<i>Rosa Carolina</i>)
Witch-Hazel (<i>Hamamelis virginiana</i>)	American Elderberry (<i>Sambucus Canadensis</i>)
Winterberry (<i>Ilex verticillata</i>)	High Bush Blueberry (<i>Vaccinium corymbosum</i>)
Mountain Laurel (<i>Kalmia latifolia</i>)	Maple-leaved Viburnum (<i>Viburnum acerifolium</i>)
Spice Bush (<i>Lindera benzoin</i>)	Arrow-wood (<i>Viburnum dentatum</i>)
Northern Bayberry (<i>Myrica pensylvanica</i>)	Highbush Cranberry (<i>Viburnum trilobum</i>)
Ferns :	
Maidenhair Fern (<i>Adiantum pedatum</i>)	Interrupted Fern (<i>Osmunda claytonia</i>)
Ladyfern (<i>Athyrium pendatum</i>)	Christmas fern (<i>Polystichum acrostichoides</i>)
Cinnamon Fern (<i>Osmunda cinnamomea</i>)	Marginal Wood Fern (<i>Dryopteris marginalis</i>)
Flowering Plants:	
Columbine (<i>Aquilegia canadensis</i>)	Virginia Creeper (<i>Parthenocissus quinquefolia</i>)
Swamp Milkweed (<i>Asclepias incarnata</i>)	Hairy Beardtongue (<i>Penstemon hirsutus</i>)
White Wood Aster (<i>Aster divaricatus</i>)	Moss Phlox (<i>Phlox subulata</i>)
New York Aster (<i>Aster novi-belgii</i>)	May Apple (<i>Podophyllum peltatum</i>)
Virgin's Bower (<i>Clematis virginiana</i>)	Jacob's Ladder (<i>Polemonium van-bruntiae</i>)
Joe Pye Weed (<i>Eupatorium purpureum</i>)	Solomon's Seal (<i>Polygonatum pubescens</i>)
Wild Geranium (<i>Geranium maculatum</i>)	Bloodroot (<i>Sanguinaria canadensis</i>)
Rose Mallow (<i>Hibiscus moscheutos</i>)	Blue-Stem Goldenrod (<i>Solidago caesia</i>)
Turk's Cap Lily (<i>Lillium superbum</i>)	Showy Goldenrod (<i>Solidago speciosa</i>)
Cardinal Flower (<i>Lobelia cardinalis</i>)	Foamflower (<i>Tiarella cordifolia</i>)
Great Blue Lobelia (<i>Lobelia siphilitica</i>)	Trillium (<i>Trillium grandiflorum</i>)
Trumpet Honeysuckle (<i>Lonicera sempervirens</i>)	Iron Weed (<i>Vernonia noveboracensis</i>)
Bergamot (<i>Monarda fistulosa</i>)	Violet (<i>Viola sororia</i>)
Grasses:	
Big Bluestem (<i>Andropogon gerardii</i>)	Switchgrass (<i>Panicum virgatum</i>)
Purple Lovegrass (<i>Eragrostis spectabilis</i>)	Indian Grass (<i>Sorghastrum nutans</i>)
Little Bluestem (<i>Schizachyrium scoparium</i>)	

Appendix 4

General Planting Guidelines

(Referencing part 4 g of Coastal Planting Guide for the Village of Mamaroneck)

1) Timing

Planting Dates for Zone 7 by Plant Type:

Cool Season Grass – spring 3/10 to 5/10
Cool Season Grass – fall..... 9/1 to 10/15
Warm Season Grass – spring.....no later than 5/10
Warm season grass – dormant.....after 12/1
Bare Root Deciduous – springup to 4/15
Bare Root Deciduous – fall11/5 to 12/5
Bare Root Conifers – springup to 4/15
Bare Root Conifers – fall11/5 to 11/25
Containerized or B&B Deciduous – spring: up to 5/1
Containerized or B&B Deciduous – fall: 9/1 to 11/25
Containerized or B&B Coniferous – spring: up to 5/1
Containerized or B&B Coniferous – fall: 8/15 to 11/15
Spartina - potted or plugs4/1 -6/1 (and 8/30 to 9/30, expect winter losses)

2) Soils

Quality

Though it is important to disturb as little of the site as possible, the addition of compost and manures can be used to improve soil composition which can improve the establishment and growth of added plant material. These new plants will themselves eventually provide organic matter to the soils. The use of non-indigenous topsoil containing beneficial microorganisms can benefit site stability and plant viability. However, this added topsoil could introduce undesirable soil ingredients that are currently non-existent on the site (primarily weed species, but also chemical contaminants, recycled wastes, etc.). Therefore, soil saved from the work site is preferable.

Note: Federal, state or local regulations and/or permits may not allow the use of additional soil.

Preparation

The intention is to create a favorable environment where plants will thrive. In all cases of plant installation but, especially in critical zones, this requires proper site preparation. Remove logs, stumps, brush, dead plant material, debris, and rocks over three inches in diameter. If soil is compacted or has been bare for a significant amount of time, soil should be dug and turned over to a depth of nine to 12 inches in order to allow for effective plant performance.

3) Plant Installation

When planting *Spartina alterniflora* (Smooth cordgrass) at water's edge, commercially purchased plant plugs or bare root material should be installed by hand using spades, dibbles, or planting bars. Plugs should be planted from the mid-point between high tide and low tide elevations up to the mean high tide elevation. Spacing between 18 and 36 inches apart should suffice, as plants can spread by rhizomes up to two feet annually. At least two parallel rows, staggered, should be planted to provide faster and denser coverage. Protect against foraging water fowl.

Attachment to "A Coastal Planting Guide for the Village of Mamaroneck"

General Planting Guidelines, continued:

All other plant material

1. Establish the shape of any new beds using a sharp-edged spade and V-cut edge of bed removing sod within.
2. Before the addition of any plant material, it is in the best interest of the new plants to amend the soil before planting (refer to the Soil Quality section above.)
3. A list of recommended coastal plants is included in Tables C - H. Substitutions, if necessary or desired, should favor native, non-invasive plant species suitable for the prevalent site conditions.
4. All plants shall be balled and wrapped or container grown, with the exception of *Spartina* plugs. Non-rot materials (such as plastic "burlap") should not be used.
5. With container grown stock, the container is to be removed and the roots cut through the surface in two to three vertical locations. With B&B materials, where ever possible, any metallic support frame including twine or rope shall be removed before planting and the burlap rolled back below the root ball. All plant locations to follow approved planting plan.
6. Planting holes should be saucer-shaped and at least three times the size of the root ball or container. Plants should be placed at the same depth they were growing in the pot.
7. Set plants upright, plumb, and faced to give the best appearance and relationship to each other or adjacent structures. Plants installed in a mass should be alternately spaced on center unless otherwise indicated on the planting plan.
8. Back fill hole with one quarter of amended soil. Fill hole with water, let drain down and settle before filling hole. Plants should be watered again thoroughly immediately after planting.
9. When planting and initial watering is complete, mulch all garden beds to at least a 2-3" depth with a porous, organic, cedar mulch (refer to Mulch section below).
10. All organic debris should be removed and disposed of offsite in compliance with all state and local codes.

4) Mulch

Type

It is essential that weed-free, undyed, organic Cedar mulch be utilized. Double shredded Cedar mulch is best because it's fine size allows quick decay. In addition, double shredded cedar will not block waterways if flooding occurs before breakdown. Bark should be avoided since it is prone to floating.

Application

Apply mulch around each plant, 2 to 3 inches deep, and pull back slightly from the plant trunk or stem.

5) Maintenance Considerations

In general, coastal buffer areas may be allowed to grow naturally into their vegetative states. Once established, vegetated buffers require little maintenance beyond periodic inspections. Yet, routine maintenance is required for keeping vegetated coastal buffers healthy. Inspection and maintenance are most critical when coastal zone areas are initially installed and after periods of heavy rainfall and/or flooding. Evaluations should then focus on erosion of soils, change in density of vegetation, evidence of destructive water flow through the areas, and any possible negative effects from debris and foot traffic. If more than six inches of sediment or mulch has settled in one area, it should be removed and redistributed throughout the site."

Attachment to “A Coastal Planting Guide for the Village of Mamaroneck”

General Planting Guidelines, continued:

Lawn Care:

When planting and maintaining lawns that are in close proximity to coastal buffers, much care should be taken. Lawn care has come at a high cost to the environment because any material added to lawns has residue that runs directly into surrounding water systems. This problem led New York State to adopt a Nutrient Runoff Law to improve water quality in New York by reducing phosphorus runoff. When establishing a lawn, select a locally adapted grass seed that is appropriate for the site: i.e., sun, shade, wet, dry, etc. For lawn health and maintenance, avoid all chemical fertilizers and herbicides and switch to organic options by adhering to the following procedures:

- By allowing grass clippings to remain on lawn, valuable nutrients are returned to the soil. Grass cuttings are an excellent source of nitrogen; the main ingredient in many commercial fertilizers.
- Mow often, but don't cut more than one-third of the grass height at one time.
- Aerate every couple of years to allow water and nutrients to permeate the root zone.
- To correct the soil PH, annually sprinkle sulfur or lime on the lawn.
A soil test can determine which is needed.
- Control pre-emergent lawn weeds with corn gluten.
- Spot treat weeds with vinegar by mixing 5 parts white vinegar, 2 parts water, 1 part dish soap, and apply with a hand pump sprayer to weeds only.
- To treat lawn grubs, milky spore is a natural remedy.

For more lawn care information: <http://blogs.cornell.edu/horticulture/about/lawn/lawn-fertilizing/>

Fertilizer and Pesticide Management:

In addition to lawns, coastal garden beds should also be treated with respect to the surrounding environment. Since runoff carries excessive fertilizer down storm drains and directly into our waterways, only organic material should be used on lawns and gardens near coastal buffers. Avoid the use of chemical fertilizers and think organic. Organic fertilizer is simply a fertilizer derived from natural sources that feeds the soil with nutrients necessary to maintain soil health. This idea of feeding the soil as well as the plant helps to create a healthier ecosystem. To promote the use of organic garden care, the following maintenance can be practiced:

- Select site specific plants, preferably native, to reduce overall maintenance requirements.
- Mulch garden beds regularly to prevent weeds.
(For more detailed information, see 'Mulch' section above.)
- Add a diversity of organisms and amendments to the soil such as compost, leave-mold (i.e. composted leaves), compost tea, bone/blood meal, nematodes, earthworms, etc.
- Pull weeds by hand before they flower since they can become a perennial problem if ignored.
For weeds with tap roots such as dandelions, it's best to dig up the entire root system.
- Avoid runoff and evaporation by using drip irrigation instead of sprinklers.

For additional information about using organic matter in the garden:

<http://www.gardening.cornell.edu/factsheets/orgmatter/>