

Landscaping Guidelines

The Plan and Architectural Review Commission reviews site and landscape plans for all new and expanded commercial, industrial, institutional, and multiple family housing projects. Landscaping beautifies the property and city, buffers uses and unattractive structures, increases property values, conserves energy, and helps clean the air and water. The Commission adopted the following guidelines to assist developers, builders, and property owners in meeting the expectations for landscaping. The use of the term “must” below reflects zoning ordinance requirements that are mandatory.

Required Components of a Landscape Plan

- A scale (e.g., 1 inch = 50 feet), a north arrow, a date, and an accurate representation of site conditions (e.g., property dimensions should be correct with all features drawn to scale).
- All areas to be left in green space and how they will be covered (e.g., grass, mulch, native vegetation).
- All trees over 4” caliper to be removed or portions of woods with such trees that are proposed for removal.
- All existing trees that are over 4 inches caliper or the edges of woods with such trees.
- All existing trees and other plantings proposed to remain on the site after construction, including proposed locations for barrier fencing or other ways to ensure their preservation.
- Locations, species, size at time of planting, and size at maturity for proposed landscape plants.
- Adjacent streets, existing and proposed buildings, parking lots, loading areas, dumpsters, existing or proposed grades, outdoor storage areas, and mechanical units and utilities in relation to proposed plantings.
- Name, address, and phone number of both the person who prepared the plan and the property owner.

For simple projects, the Landscape Plan may be included on a map that also shows other proposed site improvements, like proposed buildings, signs, lighting, utilities, and grading.

Treatment of Existing Vegetation

Pre-existing landforms, terrain, and vegetation should be preserved as much as practical. This may be achieved by minimizing building construction and site modifications in areas not essential to project development. High-quality, mature, and native trees and hedges should be retained where practical and should not be removed to facilitate commercial signage. Preservation of existing vegetation will reduce expectations for new landscaping, while major removal of existing vegetation may result in expectations for new landscaping greater than what these guidelines normally suggest. In general, where large, high quality trees are proposed for removal on a landscape plan, the equivalent diameter of new trees should also be included in the plan (e.g., one maple with a 12-inch diameter trunk removed = planting of four 3-inch diameter hardwood canopy trees). Similarly, mature trees identified for preservation in the approved Landscape Plan but subsequently lost should be replaced by new trees of similar total diameter.

Mature trees identified for preservation on a Landscape Plan should be protected during construction by not allowing grading or equipment or vehicle storage in these areas and by making all contractors aware of preservation requirements. During construction, barrier fencing should

generally be placed at the critical root zone (CRZ) of the tree, as defined as a radius equivalent to 1.5 feet for every inch in trunk diameter at breast height (DBH). For example, a tree with a trunk diameter of 12 inches has a critical root zone radius of 18 feet.

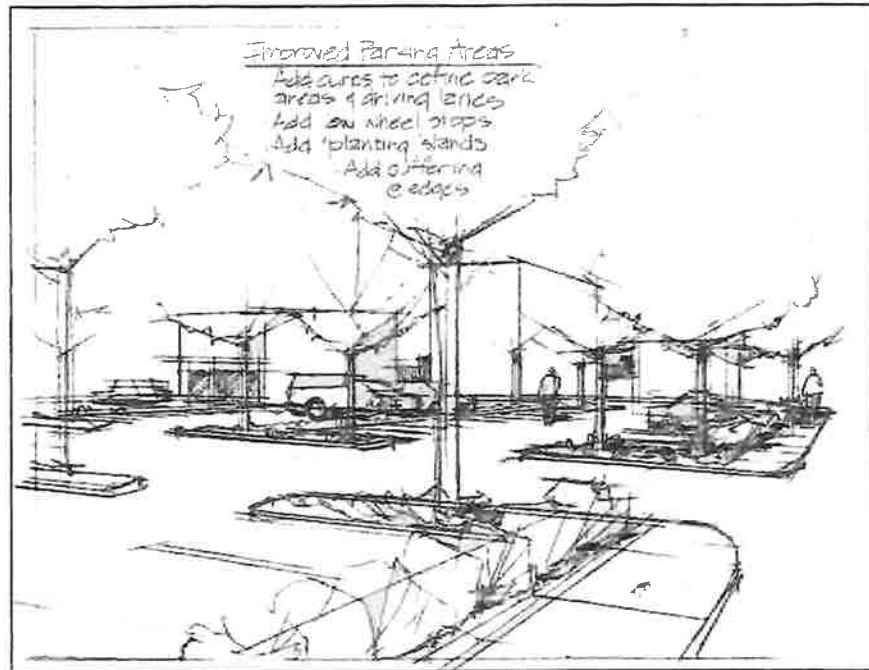
The Urban Forestry Management Plan available from the City's Parks, Recreation, and Forestry Department—contains additional preservation guidance (see particularly the City's Terrace Tree Protection guidelines).

Recommended Locations and Amount of New Landscaping

New landscape plantings should be provided on different parts of the site, as advised below:

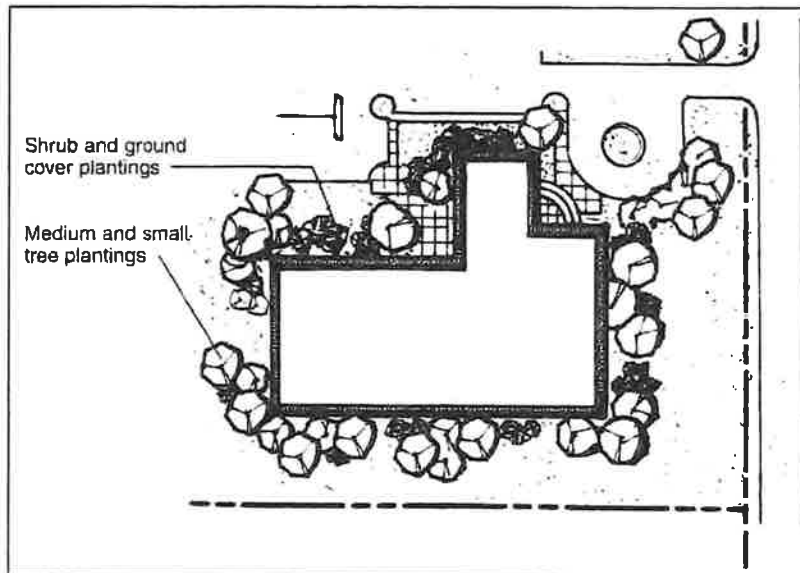
1. **Street Frontages.** One deciduous tree must be planted for each 35 feet along each side of a street right-of-way, except where a clustered or wider spacing is allowed by the City Forester or where traffic visibility, street lights, or utilities would be negatively affected. Street trees should be planted midway between the street curb and the sidewalk, or within 15 feet of the property line adjoining the street, but only if space is not available between the sidewalk and curb. Plantings may also be appropriate in any boulevard included in development plans. Street tree species should be approved by the City Forester prior to installation, and should be based generally upon the information provided in Figures 3 and 4 below.
2. **Paved Areas.** One large deciduous tree and 60 plants of additional landscaping (see Figure 3: Appropriate Plant Species and Sizes) should be planted for each 1,500 square feet of paved area—which is about the same amount of space required for five parking spaces plus a driveway. Plants should be installed in landscaped islands within the paved area or within 15 feet of the edges of the paved area. Landscaped islands or peninsulas must be provided at the end of every parking row, and interior islands should be provided for every 20 parking spaces in non-industrial projects. Species selection for paved area plantings is particularly important to ensure salt and snow tolerance (see Figure 6), proper growth habit and branch height, avoidance of messy fruit or other litter from the tree, and maintenance of good visibility within parking lots.

Figure 1: Parking Lot Landscaping Example



3. **Building Foundations.** 160 points of landscaping (see Figure 3: Appropriate Plant Species and Sizes) should be planted for each 100 lineal feet of exterior building wall that is visible from public rights-of-way and adjoining sites. The graphic on the following page provides an example of building foundation landscaping. Plants required by this section should be installed within 20 feet of the building foundation and generally should not include large deciduous trees.
4. **Landscaped Bufferyards.** The City requires installation of a landscaped bufferyard:
 - In yards where a B-1, B-3, or M-1 zoning district abuts a residential use or zoning district,
 - Where off-street parking areas for five or more vehicles are within 15 feet of a lot line, except where the next door lot also contains parking within that same distance, and
 - Where lots in a new residential subdivision back onto a proposed major street.

Figure 2: Building Foundation Planting Example



The minimum width of a landscaped bufferyard is 10 feet (30 feet where subdivision lots back onto a major street), not including the area between the sidewalk and street curb. Bufferyards are generally required to be landscaped with two large deciduous trees, five small deciduous and/or evergreen trees, and twelve shrubs for every 100 feet of bufferyard length. The Plan Commission may instead approve substitute landscaping, a berm, an opaque fence or wall, or some combination. Fences or walls should generally not be used in street yards and must not be more than 6 feet tall in residential zoning districts and 10 feet tall in non-residential districts. A berm is mound of soil surfaced with a landscaped ground cover, generally 3 to 6 feet above the surrounding grade and preferably of an undulating or otherwise visually interesting layout.

5. **General Yard Areas.** In other parts of the site, 200 additional points of landscaping (see Suggested Plant Species and Sizes table) should be planted for each 5,000 square feet of total site area. Most general yard area landscaping should be located in street-facing yards. Except for approved natural areas, general yard areas should be seeded. Slopes should be a maximum of 3 vertical feet for every 1 horizontal foot. Where retaining walls are necessary, they should be designed to be less than 10 feet in height and constructed with stone or block, or terraced if the grade change is 10 feet or more.
6. **Screening.** Dumpsters, outside storage areas, loading docks, vending machines, and large or unsightly mechanical, utility, or telecommunication units should be enclosed by a fence, wall, and/or landscaping designed to provide a total visual screen from public rights-of-way and adjacent properties. Screening fences and walls surrounding outdoor storage areas should generally be between 6 and 8 feet tall, while fences and walls designed to screen other areas should generally be between 4 and 6 feet tall. Appropriate screening tree species are indicated in Figure 5. Future trimming of screen plantings in such a way that limits their capacity to provide a total visual screen is not permitted. The base of freestanding signs—monument and pylon signs—should also be landscaped. Low-level plantings should be selected in sign areas.

7. **Vision Triangles and Easements.** No parts of plantings within 10 feet of the ground level may extend over any public right-of-way. No new landscape plantings with a mature height over 2½ feet or with branches at maturity that will be less than 10 feet may be placed in vision triangles near street intersections (see Section 19.51.010 of zoning ordinance in order to measure extent of vision triangle). Planting in utility easements is at the risk of the property owner and may be subject to restrictions associated with the easement. Tree plantings should generally be at least 20 feet from street lights, 10 feet from hydrants, and 6 feet from gas and water valves.

Recommended Sizes and Species of New Landscaping

Figure 3 indicates the points that may be obtained for each plant within the five different categories of landscape plantings large deciduous tree, small deciduous tree, evergreen tree, shrub, and perennial planting bed. When added together, the points obtained from each plant depicted in a Landscape Plan may be used to determine whether the landscaping point guidelines above are being met. Figure 3 also provides a starting point for potential plant species selection within each of the five categories of plantings.

Figures 4, 5, and 6 include examples of appropriate tree and shrub species for different, unique applications. These include trees appropriate for placement under power lines (Figure 4), trees that are appropriate for screening (Figure 5), and plantings that are most tolerant of salt for use in and near parking lots for example (Figure 6).

Figure 7 includes species to minimize or avoid, for various reasons including overuse, susceptibility to disease, and invasive characteristics.

For more information in selecting plants, the following guides are available online at the UW–Extension (www.learningstore.uwex.edu): *Choosing the Right Landscape Plants: Factors to Consider* (A3864); *Deicing Salt Injury in the Landscape and Salt-Tolerant Landscape Plants* (A3869); *Guide to Selecting Landscape Plants for Wisconsin* (A2865). Also look for *Power Planting: How to Select and Plant Trees Near Power Lines*, available at: www.we-energies.com/forestry/treeplant_booklet.pdf.

Figure 3: Appropriate Plant Species and Sizes

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species
Large Deciduous Tree	Greater than 25 feet	2 inch trunk diameter as measured 4 1/2 feet up (1 1/2 inch for street trees)	150	Freeman maple <i>Acer x freemanii</i> Paperbark maple <i>Acer griseum</i> State Street Miyabe maple <i>Acer miyabei</i> 'Morton' Gingko (male cultivars) <i>Gingko biloba</i> Chanticleer pear <i>Pyrus calleryana</i> 'Chanticleer' Honeylocust (male cultivars) <i>Gleditsia triacanthos</i> var. <i>inermis</i> Chinkapin oak <i>Quercus muehlenbergii</i> Baldcypress <i>Taxodium distichum</i> Lindens/basswood <i>Tilia</i> spp. Elms (hybrids) <i>Ulmus</i> spp. Hackberry <i>Celtis occidentalis</i> Hazelnut <i>Corylus</i> spp.
Small Deciduous Tree	25 feet or less	1 1/2 inch trunk diameter as measured 4 1/2 feet up, or 4 feet tall	60	Birch <i>Betula</i> spp. Serviceberry <i>Amelanchior</i> Hawthorn <i>Crataegus viridis</i> Eastern redbud <i>Cercis canadensis</i> Callery pear <i>Pyrus calleryana</i> Flowering crabapples <i>Malus</i> spp. Japanese tree lilac <i>Syringa reticulata</i> Hornbeam (Musclewood) <i>Carpinus caroliniana</i> Ironwood/Hophornbeam <i>Ostrya virginiana</i>
Evergreen Tree	Usually > 10 feet	4 feet tall	40	Serbian spruce Pine (except Austrian) <i>Pinus</i> spp. (not <i>nigra</i>)
Shrub (deciduous or evergreen)	Usually less than 10 feet	2 feet in height or 2 gallon pot	20	Weigela Shrub rose Juniper Arborvitae Amelanchior Elderberry <i>Sambucus canadensis</i> "aurea" ninebark Viburnum Dogwood Cotoneaster Forsythia Potentilla Gro-low sumac Yew
Perennial Planting	Varies	Varies	20 points for every 20 sq ft of	Coneflower Catmint Columbine Aster

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species
Bed			bed	Black-eyed Susan Lily Daylily Hosta Catmint Ornamental grass Lady's mantle Brunnera Liatris Cimicifuga Peony Pachysandra Sedum Astilbe

Figure 4: Trees Appropriate for Planting under Power Lines

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species
Small Deciduous Tree	25 feet or less	1½ inch trunk diameter or 4 feet tall	60	Flowering crabapple <i>Malus</i> spp. Japanese tree lilac <i>Syringa reticulata</i>

Figure 5: Trees Appropriate for Screening

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species for Screening
Evergreen Tree	Usually > 10 feet	4 feet tall	40	Firs <i>abies</i> spp. Eastern red cedar <i>Juniperus virginiana</i> Spruces <i>Picea</i> spp. Pines <i>Pinus</i> spp. Douglas fir <i>Pseudotsuga menziesii</i> var. <i>glauca</i> Arborvitae <i>Thuja occidentalis</i> Eastern hemlock <i>Tsuga canadensis</i>

Figure 6: Salt Tolerant Plants

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species for Salt Sensitivity
Large Deciduous Tree	Greater than 25 feet	2 inch trunk diameter (1½ inch for street trees)	150	maple sweet gum
Small Deciduous Tree	25 feet or less	1½ inch diameter or 4 feet tall	60	crabapple crape myrtle dogwood
Evergreen	Usually	4 feet tall	40	American holly

Category of Plant	Expected Mature Height	Minimum Size at Time of Planting	Landscaping Points for Each Plant	Examples of Appropriate Species for Salt Sensitivity
Tree	> 10 feet			yew
Shrub (deciduous or evergreen)	Usually less than 10 feet	2 feet in height or 2 gallon pot	20	azalea barberry boxwood forsythia rhododendron spirea

Figure 7: Plant Species to Use Sparingly or Avoid

Category of Plant	Species to Use Sparingly	Species To Avoid	Reason to Avoid	Good Alternative
Large Deciduous Tree	Maple	Any ash (fraxinus)	Emerald ash borer	
	Basswood/linden	Non-resistant elms	Dutch elm disease	Resistant elms
	Honeylocust	Boxelder	Spread quickly	
		Maples (Freeman/Autumn Blaze)	Over-planted	
		Maples, Norway	Over-planted, dense	
		Maples, red	Prefer acidic soil	
		Maples, sugar	Thrives only in certain conditions; picky	
		Bradford pears	Poorly branched, tend to break	Chanticleer pear
		White mulberry	Invasive, non-native	
Small Deciduous Tree		Buckthorns	Invasive, non-native	
		Autumn-olive	Invasive, non-native	
Evergreen Tree	Blue spruce White pine White spruce	Austrian pine	Over-planted	

Category of Plant	Species to Use Sparingly	Species To Avoid	Reason to Avoid	Good Alternative
Shrub (deciduous or evergreen)		Spirea japonica	Invasive (re-seed)	Ninebark 'nanus'
		Prunus x cistena (purple sandcherry)	Short-lived	Purple ninebarks
		Burning bush (euonymus)	Invasive, non-native	
		Honeysuckle	Invasive, non-native	
		Multiflora rose	Invasive, non-native	

Descriptions and Standards for Rain Gardens and Bioswales

Rain gardens and bioswales can serve both as landscaping and stormwater management features on a building site, where appropriately designed and sited.

A rain garden is a shallow, depressed garden that is designed and positioned on a site to capture stormwater runoff and allow for the infiltration of water back into the ground. Rain garden plants are carefully chosen for their ability to withstand moisture extremes and potentially high concentrations of nutrients and sediments that are often found in stormwater runoff. A well designed and maintained rain garden serves as an attractive component of an overall landscaping plan for a development site.

A bioswale is a linear, vegetative stormwater runoff conveyance system that is designed to store and infiltrate water from small storm events back into the ground and direct water from heavy rain events to appropriate storm sewer inlets or other management facilities. The flow of water being conveyed through a bioswale is slowed down, allowing for municipal storm systems to more effectively manage heavier rain events and help reduce the risk of flooding on or off-site. Water being infiltrated or conveyed via a bioswale is also filtered by the vegetation within it, generally improving both ground and surface water quality.

The installation of a rain garden or bioswale may contribute to the overall stormwater management plan for a development site and count toward meeting the City's landscaping guidelines in the same manner as that presented for "perennial planting bed" in Figure 3 above (20 points for every 20 sq. ft.), provided that:

1. Detailed plans are provided that show all proposed dimensions of the rain garden including length, width, depth, and slope of depression; location of the rain garden on the lot relative to hard-surfaced areas, downspouts, and site topography; characteristics of the soil underlying the rain garden or bioswale; description of planting media; the species, number, and size at time of installation of all vegetation proposed for the rain garden or bioswale; and information on any other materials (e.g., rocks) that will be used to line the raingarden or bioswale.

2. Installation is not proposed for areas where there is known soil contamination unless the rain garden is proposed to be constructed with an under-drain; where the characteristics of the soil would not allow for the proper infiltration of water into the ground; or where there are expected high levels of foot traffic.
3. The owner can demonstrate that the rain garden or bioswale will be properly maintained; kept free of trash, weeds debris, and dead or dying plants; any pipes associated with the garden will be inspected on an annual basis and kept free of debris; and by the beginning of every spring dead plant materials will be cut back or removed.
4. Bioswales and rain gardens must be generously (and appropriately) vegetated to qualify for landscaping points. Bioswales and rain gardens (or portions thereof) that are lined with turf and/or rocks but do not include other vegetation will not qualify for landscaping points.
5. To serve as a component of an overall stormwater management plan for a site, detailed plans, calculations, and specifications meeting the City's stormwater management ordinance are provided. Detailed plans should include the location and description of all other stormwater management facilities serving the site, particularly those to which any bioswale will be directed.

For further information on rain garden and bioswale design, see *Rain Gardens: A How-To Manual for Homeowners*, which is available from County UW-Extension offices, Cooperative Extension Publications, DNR Service Centers, and online at <http://clean-water.uwex.edu/pubs/pdf/home.rgmanual.pdf> and *Design Guidelines for Stormwater Bioretention Facilities*, which is available from the Communications Office of the State of Wisconsin Aquatic Sciences Center and online at <http://aqua.wisc.edu/publications/PDFs/stormwaterbioretention.pdf>.

General Installation and Maintenance for Landscaping and Bufferyards

Landscaping must be installed using landscape contracting industry standards available from landscape designers and nurseries. These include proper soil conditioning, removing any packing materials including wire cages, burlap, and string, and the placement of the root collar at or slightly above grade. A 6-foot bark mulch radius around a tree is ideal, with the mulch no thicker than 4 inches in general and tapered to a depth of 1 inch at the base of the tree (the classic saucer shape). Rock mulch is discouraged around all planting areas. Figure 8 suggests proper planting and maintenance techniques for deciduous trees; techniques for evergreen trees and shrubs vary slightly, but the basic principles are similar.

All landscaping must be installed prior to building occupancy or operations, unless doing so would result in unsatisfactory plant survival. In this case, the City requires a site improvement deposit until landscaping is installed according to plan.

All required landscaping should be continually maintained in a live state to meet its original function (e.g., screen plants not overly pruned). Maintenance must include replacement of dead or dying plants, regardless of when the plant dies. Replacement should occur within the same year in which a plant dies or the next spring.

Figure 8: Deciduous Tree Planting Standard

