

# Landscaping in a Landmark Village



## **A guide for Riverside residents**

Understanding, managing, and protecting  
the unique landscape of a historic landmark village

*“Imagine a tract of land about three square miles in extent, the greater part of it covered with trees, but with an unusual proportion of glades and openings of turf among them, the trees, for the most part being in groups and small detached groves; imagine a river flowing with a winding channel through the midst of these groves; suppose that a man of taste has owned this land, and has been in the habit of driving over it in every direction, with a special view to the enjoyment of the beauty of the trees and the river; suppose that, in order to make his way about with more satisfaction, he has caused the groves to be still further opened, the less valuable trees being removed, so as to give an ample wheel-way, with easy turnings through every part; imagine, then that so much of the groves and groups, and glades as should be found within seventy feet on each side of the wheel-ways thus formed, together with numerous places of much greater breadth, suitable for parks or greens, should be made public property, the remainder being divided for residences; imagine, if you please, all this and you will have in your mind the roughly sketched groundplan of what Riverside is intended to be, and in some parts already begins to be.”*

The American Builder - December 1869



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# **I. Riverside Public Land**

## ***1. A Brief History of the Riverside Landscape***

In 1868, a group of seven Chicago businessmen decided to purchase a piece of land for development. They had in mind a place where the residents would find a retreat from urban chaos and enjoy nature. The group formed The Riverside Improvement Company, purchased parts of a horse farm 10 miles west of Chicago, and hired the firm of Frederick Law Olmsted and Calvert Vaux, already famous for their design of the New York City's Central Park. These village planners decided to maintain a pastoral feel in a residential setting, so they planned the streets to follow the DesPlaines River and natural flow lines of the area's existing topography. They set up multiple parks throughout the village to create the feeling of open land and green space. The design was completed in 1869 and it combined the natural surroundings with a high degree of then modern conveniences: gas, water services, and paved streets. The design of Riverside, recognized as a pioneer of modern urban planning, was honored in 1970 with the registration as a Historic Landmark in the National Register of Historic Places.

One of the nation's first planned communities, Riverside has 44% of its area designated as public land. The Grand Park system uses several large commons as a foundation, with 41 smaller parks located at intersections throughout town. Frederick Law Olmsted felt that with favorable enhancements to the existing natural beauty of the public lands, a feeling of sylvan tranquility would nourish the health of Riverside's population. In addition, 900 acres of Cook County Forest Preserve surround Riverside. Public land and parks are under the jurisdiction of the Public Works Department and under care of the Village Forester. Any maintenance or changes within those areas must be authorized by the Village and presented to the Landscape Advisory Commission for opinion and approval. Landscaping policies of Riverside preserve the Olmsted plan, prefer and promote native flora, and guard the precious heritage of Riverside's mature trees. Ordinances pertaining to this policy are available on the Village website.

## ***2. Maintaining Olmsted's Design - Rules on Planting***

From the Village Municipal Code:

10-2-11: THE PARK AND PARKWAY PLANTINGS:

"The original natural prairie and forested area which became the Village contained a combination of plant species representing two (2) ecosystems: the river flood plain wetland forest community and the upland prairie and oak-hickory forest community. The overall scene, undisturbed by distractions, was to show the grandeur of nature and enrich the individual with its splendor. Such scene was not to be disturbed by the focus on or display of individual plants or plantings. Green was to be its summer color, uninterrupted by other hues that would demand attention upon themselves. The landscape was to provide a setting of peacefulness, relaxation and contemplativeness; a setting conducive to a rich and lasting domestic environment.

To achieve and maintain this pastoral design, a spatial composition of compatible species of trees of varying heights shall be planted and maintained in irregularly arranged, asymmetrical groupings interspersed among open and broad spaces of greensward to provide a break in the open space having uneven and indistinct boundaries, to provide shade, to provide windbreaks, and to provide beauty while creating a sense of the peacefulness of nature which soothes and restores the spirit. In the use of the picturesque design, a limited degree of planting of a more densely massed area with a wilder and more rugged appearance shall be used for enhancement along the river bank.

To retain this natural and relaxed atmosphere of greenery, distracting elements such as plantings having vivid colors or of an exotic nature, flower beds, stone and wood-chip beds, road structures such as benches, playground equipment, retaining walls, water fountains, fences and signage must be avoided or exceedingly minimized and so installed and arranged as to be inconspicuous, employing harmonious natural materials and dark brown, green or other colors suitable to the surroundings."



### ***3. What Residents Should be Aware of – “DOs” and “DON’Ts” on Public Land***

#### **3.1. Removal of Plants**

Removal of plants on public land should only be done by the Village. If residents find any of the growth a problem, or think it is diseased, they should contact the Village Forester. In fact, spotting a disease or any insects potentially dangerous to the health of plants (e.g. Gypsy Moth) and reporting it is a great help in preserving our precious landscape.

#### **3.2. Responsibility of Property Owners**

Property owners are responsible for the upkeep of the parkways adjacent to their property and need to keep them free of weeds, mowed down to at least 10 inches, and free of overgrowth. However, any planting in these parkways must be done or approved by the Village. Planting flowers around tree trunks can introduce disease to the tree roots and is not permitted. Existing plantings require Village approval. Placing river stones, lava stones or anything else other than natural mulch at the base of any tree can cause root damage or soil compacting and is not permitted.

#### **3.3. Construction and Tree Preservation**

Even a minor construction can kill a tree or shrub. Storage of equipment and materials, chemical spillage, activity (such as digging or compacting the soil) within the root system, can all be causes of a plant's death. The loss of mature plants imposes higher replacement cost and is a bigger loss to the environment. In case of mature trees, replacement will never be of equal value since only young plants can be transplanted. Below are measures Riverside employs to prevent damage to vegetation in public areas. These same steps can and should be applied on private property:

- property owners need a permit to do any construction work
- all trees on public property must be fenced as far away from their trunk as their branches extend (drip line)
- nothing can be stored within the fence: no soil, equipment, materials, etc.
- any alterations must be approved by the Village

## II. Riverside Private Land

### *1. Why We Try to Help*

The Village of Riverside encourages residents to landscape their private property in sympathy with the Olmstedian landscape on public land in order to help maintain our Historic Landmark status (see Chapter 3). For more details, residents may browse Riverside Library's vast collection of books on Olmsted's theories and philosophy of landscaping. The Village Forester or Landscape Advisory Commission can also be contacted with questions (see contact information page 21). In case of planned landscaping work on a property, drawings and a permit application must be presented to the Public Works Department, Village Forester, or Landscape Advisory Commission for approval, if any such plans infringe upon public property. This is done not to limit or impose anybody's taste on residents, but to help them make sure that the plants chosen have a better chance of surviving in the spot chosen and that they are not nuisance plants or disease prone. All residents are welcome to visit LAC meetings held the second Tuesday of each month at 7:00PM in the Township Hall. The meetings are open to the public.

From the Village Municipal Code: 10-2-14: THE RESIDENTIAL PROPERTIES:

"An integral part of the General Plan was the inclusion of large, irregular residential lots having spacious front yards with appropriate plantings complementing the public lands and plantings, to enhance the overall semi-rural, country-like setting of the area. Over the years many of these original platted lots have been divided and homes have been built on the small subdivided parcels, thus adversely affecting the open and spacious elements of the General Plan. It is therefore essential that efforts be made to preserve those remaining platted lots from further reduction in size.

(...)The Board (...) shall encourage tree planting in front yard areas; (...) shall regulate and restrict the installation of fences and other walls, hedges or barriers which interfere with the openness between lots; (...)" (Ord. 1971, 12-2-1991) .

The following chapters discuss many aspects of landscaping to help Residents establish healthy, lasting, trouble-free plant environment for their property.

## ***2. General Information***

### **2.1. Riverside Plant Communities**

Riverside's location on the banks of the DesPlaines River assures a variety of plant communities. While some existed in the past, some have survived thanks to preservation efforts.

**Prairie** – “Meadow” in French, prairie is a native North American type of ecosystem characterized by grasses and sun-loving wild flowers. Once abundant in the Midwest area, only one-hundredth of one percent of Illinois original high quality prairie survives. Many of the remnants are found in the Chicago region and they contain a wealth of plants and animals. Riverside has lost any prairie that predated settlement and probably covered the northern part of the village.

**Woodlands** - Land with trees: some stand alone in vast grasslands, some grow in groups letting sunlight reach the ground so grasses and wildflowers can grow among them, other wooded areas are dense forests where the forest floor is shadowy. Riverside is full of all types of woodlands, e.g. riverbanks, Indian Gardens, etc.

**Wetlands** - Wetlands are areas transitioning between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by shallow water. The plants inhabiting wetlands are mainly hydrophytes (specifically adapted to live in wet conditions). In Riverside, wetlands can be found along the DesPlaines River. They also function as flood control areas.

**Savanna** - Usually a transitional community located between areas of forest and grassland. A plain characterized by herbaceous, primarily coarse, grasses (understory), and scattered with open-growth trees, or trees growing in small groves, grading into either open plain or woodland. Oak savanna covered some 11,000,000 to 13,000,000 hectares of the Midwest at the time of settlement, extending over portions of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Michigan, Indiana and Ohio.

### **2.2. Biodiversity**

Biodiversity - Various ecosystems and variety within each of them assure biodiversity: plants and animals adapted to living together over thousands of years. Each species plays a role in its ecosystem, and the loss of a seemingly unimportant creature or plant affects the entire system in ways that are hard to predict.

We benefit from biodiversity because healthy, diverse ecosystems provide:

- plants that produce the oxygen we breathe
- improvement of water quality by trapping sediments and absorbing or breaking down pollutants; land where floodwaters can collect to mitigate flood damage

- insects that pollinate our food crops
  - species that could hold clues for medicine (almost half of our prescription drugs are based on natural products)
  - healthy natural places which inspire us and offer respite from the stress of urban life.
- Also, biodiversity helps ecosystems recover from stresses (natural disasters, human impact, invasive species).

The Chicagoland area possesses some of the best remaining tall-grass prairies and open woodlands harboring many rare or endangered species of native flora and fauna. It is our responsibility to protect diversity of life for the benefit of future generations.



### ***3. Native vs. Non-native Plants***

In Riverside, Olmsted used native species, as well as some non-native plants. He preserved existing groves which he supplemented with locally obtained materials.

#### **3.1. Native Plants**

Native, or indigenous, plants are those that have evolved over thousands of years in a particular region and have adapted to its geography, hydrology, and climate. Having evolved together, native plants and wildlife mutually depend upon and support each other. This relationship and co-existence of specific, native species of flora and fauna is known as an ecosystem.

##### **3.1.1. Benefits of Native Landscaping**

To preserve and promote a healthy environment from which we greatly benefit, we should realize the importance of native plants. Fortunately, gardening with native plants is growing in popularity within North America. The damage caused by exotic invasive ornamental species has threatened the existence of many of our indigenous plants. To guard our native natural resources, we need to make wise choices in the landscape materials we purchase - they should be native to our region. Benefits of using native plant species are unquestionable:

- \*a) they need less water than non-native plants
- \*b) require fewer chemical pesticides
- \*c) require little or no fertilizer
- \*d) attract beneficial wildlife including birds and pollinating insects
- \*e) are aesthetically pleasing
- \*f) native plants add biological and genetic diversity to the domestic landscape
- \*g) save money - they have a greater chance of surviving extremities of our local climate - they are hardy, drought resistant, low maintenance
- \*h) create oxygen we breathe
- \*i) help in preventing floods
- \*j) purify water

a) Native plants require less water than lawns. The modern lawn requires significant amounts of water to thrive. In urban areas, lawn irrigation uses as much as 30% of the water consumption on the East Coast and up to 60% on the West Coast. The deep root systems of many native Midwestern plants increase the soil's capacity to store water. Native plants can significantly reduce water runoff and, consequently, flooding.

b) Native plants require fewer pesticides than lawns. Nationally, over 70 million pounds of pesticides are applied to lawns each year. Pesticides run off lawns and can contaminate rivers and lakes. People and pets in contact with chemically treated lawns can be exposed to pesticides. Native plants thrived here for thousands of years before pesticides were invented; they can thrive today without doses of sprays and powders.

c) Native plants do not require fertilizers. Vast amounts of fertilizers are applied to lawns. Excess phosphorus and nitrogen (the main components of fertilizers) run off into lakes and rivers causing excess algae growth. This depletes oxygen in our waters, harms aquatic life and interferes with recreational uses.

d) Closely mowed lawns are of little use to most wildlife. Native plants provide shelter and food for wildlife. They attract a variety of birds, butterflies, and other wildlife by providing diverse habitats and food sources. In return, wildlife will help control nuisance insects such as mosquitoes. A single bat can eat 3,000 to 7,000 insects per night. Canada geese, also considered a pest in some regions, prefer short turf grass over taller native grasses.

f) Native plants promote biodiversity and stewardship of our natural heritage. In the U.S., approximately 20 million acres of lawn are cultivated, covering more land than any single crop. Native plants are a part of our natural heritage. Natural landscaping is an opportunity to reestablish diverse native plants, thereby inviting the birds and butterflies back home.

g) Native plants save money. A study by Applied Ecological Services (Brodhead, WI) of larger properties estimates that over a 20 year period, the cumulative cost of maintaining a prairie or a wetland totals \$3,000 per acre versus \$20,000 per acre for non-native turf grasses.

h) Native plants help reduce air pollution. Natural landscapes do not require mowing. Lawns, however, must be mowed regularly. Gas powered garden tools emit 5% of the nation's air pollution. Forty million lawnmowers consume 200 million gallons of gasoline per year. One gas-powered lawnmower emits 11 times the air pollution of a new car for each hour of operation. Excessive carbon from the burning of fossil fuels contributes to global warming. Native plants remove, carbon from the air.

i) The loss of deep-rooted plant communities in combination with developments which use a run-off hydrology contribute to our flooding problems. Native plants in home landscapes help in restoring the natural ground hydrology. A bed of indigenous plants located downgrade on the property provides a place where water can soak into the soil rather than run off. Once the extensive root systems of native plants are established, common weeds find it difficult to compete for space in the soil.

### **3.1.2. Native Species List (Recommended Plants)**

#### **Canopy Trees**

|                   |                          |
|-------------------|--------------------------|
| Black Maple       | <i>Acer nigrum</i>       |
| Sugar Maple       | <i>Acer sacharum</i>     |
| Ohio Buckeye      | <i>Aesculus glabra</i>   |
| River Birch       | <i>Betula nigra</i>      |
| Bitternut Hickory | <i>Carya cordiformis</i> |

Shagbark Hickory  
Hackberry  
Persimmon  
Kentucky Coffee Tree  
Butternut  
Black Walnut  
Tulip Tree  
Sourgum  
White Pine  
Sycamore  
White Oak  
Swamp White Oak  
Hill's Oak  
Shingle Oak  
Bur Oak  
Chinquapin Oak  
Red Oak  
American Linden

*Carya ovata*  
*Celtis occidentalis*  
*Diospyros virginiana*  
*Gymnocladus dioicus*  
*Juglans cinerea*  
*Juglans nigra*  
*Liriodendron tulipifera*  
*Nyssa sylvatica*  
*Pinus strobus*  
*Platanus occidentalis*  
*Quercus alba*  
*Quercus bicolor*  
*Quercus elipsoidalis*  
*Quercus imbricaria*  
*Quercus macrocarpa*  
*Quercus muhlenbergii*  
*Quercus rubra*  
*Tilia americana*

#### **Understory Trees**

Juneberry  
Allegheny Shadblow  
Pawpaw  
American Hornbeam  
Redbud  
Pagoda Dogwood  
Flowering Dogwood  
Downy Hawthorn  
Dotted Hawthorn  
Wild Sweet Crab  
Iowa Crab  
Hop Hornbeam  
Wild Plum  
Chokecherry  
Sassafras

*Amelanchier arboria*  
*Amelanchier laevis*  
*Asimina triloba*  
*Carpinus caroliniana*  
*Cercis canadensis*  
*Cornus alternifolia*  
*Cornus florida*  
*Crataegus mollis*  
*Crataegus punctata*  
*Malus coronaria*  
*Malus ioensis*  
*Ostrya virginiana*  
*Prunus americana*  
*Prunus virginiana*  
*Sassafras albidum*

#### **Shrubs**

Black Chokeberry  
Sweet fern  
Pale Dogwood  
Grey Dogwood  
Round-leafed Dogwood  
Red-osier Dogwood  
American Hazelnut  
Dwarf Honeysuckle  
Witch Hazel

*Aronia melanocarpa*  
*Comptonia peregrina*  
*Cornus obliqua*  
*Cornus racemosa*  
*Cornus rugosa*  
*Cornus stolonifera (sericea)*  
*Corylus americana*  
*Diervilla lonicera*  
*Hamamelis virginiana*

|                       |                                      |
|-----------------------|--------------------------------------|
| Winterberry           | <i>Ilex verticillata</i>             |
| Spicebush             | <i>Lindera benzoin</i>               |
| Yellow Honeysuckle    | <i>Lonicera prolifera</i>            |
| Ninebark              | <i>Physocarpus opulifolius</i>       |
| Black Haw             | <i>Viburnum prunifolium</i>          |
| Wafer Ash             | <i>Ptelea trifoliata</i>             |
| Fragrant Sumac        | <i>Rhus aromatica</i>                |
| Shining Sumac         | <i>Rhus copallina var. latifolia</i> |
| Smooth Sumac          | <i>Rhus glabra</i>                   |
| Staghorn Sumac        | <i>Rhus typhina</i>                  |
| Illinois Rose         | <i>Rosa setigera</i>                 |
| Elderberry            | <i>Sambucus canadensis</i>           |
| Red Berried Elder     | <i>Sambucus pubens</i>               |
| Buffalo Berry         | <i>Shepherdia canadensis</i>         |
| Bladdernut            | <i>Staphylea trifolia</i>            |
| Maple-leafed Viburnum | <i>Viburnum acerifolium</i>          |
| Arrow-wood            | <i>Viburnum dentatum</i>             |
| Nannyberry            | <i>Viburnum lentago</i>              |

#### Perennials, Grasses and Groundcovers

|                                     |                                 |
|-------------------------------------|---------------------------------|
| Wild Ginger                         | <i>Asarum canadense</i>         |
| Black Snakeroot                     | <i>Actaea simplex</i>           |
| Wild Nodding Onion                  | <i>Allium cernuum</i>           |
| Lead Plant                          | <i>Amorpha canescens</i>        |
| Rue Anemone                         | <i>Anemonella thalictroides</i> |
| Wild Columbine                      | <i>Aquilegia canadensis</i>     |
| Jack-in-the-Pulpit                  | <i>Arisaema triphyllum</i>      |
| Swamp Milkweed                      | <i>Asclepias incarnata</i>      |
| New Jersey Tea                      | <i>Ceanothus americanus</i>     |
| Virgin's Bower                      | <i>Clematis virginiana</i>      |
| Tickseed                            | <i>Coreopsis tripteris</i>      |
| Shooting Star                       | <i>Dodecatheon meadia</i>       |
| Purple Coneflower                   | <i>Echinacea purpurea</i>       |
| Purple Love Grass                   | <i>Eragrostis spectabilis</i>   |
| Rattlesnake Master                  | <i>Eryngium yuccifolium</i>     |
| Bottle Gentian                      | <i>Gentiana andrewsii</i>       |
| Wild Geranium                       | <i>Geranium maculatum</i>       |
| Prairie Smoke                       | <i>Geum triflorum</i>           |
| Blue Flag Iris                      | <i>Iris shrevei</i>             |
| Royal Blazingstar, Rough Gayfeather | <i>Liatris aspera</i>           |
| Meadow Blazingstar                  | <i>Liatris ligulistylus</i>     |
| Cardinal Flower                     | <i>Lobelia cardinalis</i>       |
| Blue Cardinal Flower                | <i>Lobelia siphilitica</i>      |
| Virginia Blue Bells                 | <i>Mertensia virginica</i>      |

Pale Beard Tongue  
Purple Prairie Clover  
Prairie Phlox  
Yellow Coneflower  
Wild Petunia  
Bloodroot  
Royal Catchfly  
Prairie Dropseed  
Foamflower  
Purple Trillium  
White Trillium  
Wake Robin  
Bell-Wort, Big Merrybells  
Blue Vervain  
Common Ironweed  
Culver's Root  
Bird's Foot  
Golden Alexander

*Penstemon grandiflorus*  
*Petalostemum purpureum*  
*Phlox*  
*Ratibida pinnata*  
*Ruellia humilis*  
*Sanguinaria canadensis*  
*Silene regia*  
*Sporobolus heterolepis*  
*Tiarella cordifolia*  
*Trillium erectum*  
*Trillium grandiflorum*  
*Trillium luteum*  
*Uvularia grandiflora*  
*Verbena hastata*  
*Vernonia fasciculata*  
*Veronicastrum virginicum*  
*Viola pedata*  
*Zizia aurea*



## ***4. What to Consider When Landscaping Your Property***

### **4.1. General Suggestions**

- Know your property lines!
- Consider native species that are appropriate to your sun exposure, drainage and soil type. If you are determined to plant a non-native plant, make sure it is non-invasive and not on the Village list of forbidden plants.
- Plant a variety of species instead of a monoculture - it will help control disease.
- Group plants of various sizes to achieve a layered effect: canopy trees and understory trees and shrubs.
- Use the same species that are already growing in neighboring parks, parkways and yards so that your additions continue to complement the landscape rather than create a contrasting, striking view.
- Avoid cultivars.
- Mulch.
- Improve your soil.

### **4.2. Replacing Parts of Your Lawn**

If you decide to remove parts of your lawn and create flower beds, consider the following steps:

- remove parts of your lawn (use a sod cutter)
- prepare soil - do not turn it over as it will expose weed seeds and give them a chance to germinate. To chemically remove undesirable vegetation, use a low toxicity, non-persistent herbicide such as glyphosate (sold under various brand names).
- plant native (grown from local seeds) trees, shrubs, flowers, groundcovers, grasses
  - seeds: less expensive but native plants grow slowly from seed often not blooming until the third year. This is normal, so don't be discouraged. To mark the area that you seeded, mix seeds with sawdust. Water for the first 4-6 weeks to help the seeds germinate. On average, a 75% rate of germination can be expected.
  - transplants: grow more quickly than seeds, often blooming in the first year. Keep your costs down by buying the smallest plants available. Space the plants one foot apart and mark for later identification.

### **4.3. Design Your Garden with Native Plants**

- Consider converting infrequently used areas of your garden to native plants.
- Talk to your neighbors about what you are doing. Relaying the benefits of natural landscaping may inspire others to try it.
- Talk with local officials about landscaping ordinances you should be aware of (e.g. restrictions on vegetation height).

Local or Regional Sources: Plant material that originates in and is native to your geographic region is generally the best to use. These regions have ecological, not political boundaries, i.e. it is better to use a source from your geographic region but outside your state than to use a source from a different geographic region inside your

state. Such regions are often referred to as eco-regions by scientists.

#### **4.4. Be Careful**

- Before digging, call the utility lines marking company (1-800-JULIE) to have them mark your buried utility lines so you do not accidentally disturb them.
- When digging, make sure you do not disturb tree roots as it may cause a tree to die or become infected with disease.
- Do not plant at the tree base: you will disturb roots and you may expose them to disease.
- Do not place any inorganic material around the tree base (lava stones, river stones, etc) because it compacts the soil and roots, and prevents the free flow of water and oxygen to the root system. Instead, mulch the base of your tree.

#### **4.5. Maintain Your Landscape Naturally**

- Mulch with a weed-free material (e.g. clean straw or wood chips) to keep the weeds down.
- Cut, rather than pull, weeds. Pulling weeds may damage the roots of young native plants. Pulling also disturbs the soil, encouraging weed growth.
- If you use seeds, keeping your landscaped area cut to 6 inches during the first year will help control weeds. Most seeded native flowers and grasses will not grow taller than 6 inches the first year.
- In many Midwestern natural areas controlled burns are necessary to clear away old vegetation and stimulate new growth. Nutrients from the ash nourish the soil. However, landscape burns are illegal in Riverside. Cutting and removing the debris from the area mimics the natural fire cycle. It exposes soil to the warmth of the sun and encourages growth. Cutting can be done in the spring or fall.

#### **4.6. Leaf Mulching and Mowing**

Tree leaves are a precious source of organic matter and nutrients for use in your landscape. They contain 50- 80% of the nutrients a plant extracts from the soil and air during the season. Trees in one acre of forest shed as much as two tons of leaves each fall. In natural areas, tree leaves and other organic waste form a natural carpet over the soil surface thus preserving moisture, modifying temperatures and preventing soil erosion and crusting. In time, bacteria, fungi and other organisms decompose or compost the leaves and other organic material, supplying the existing plants with a natural, slow release form of nutrients. You can and should take advantage of this same concept. Rather than disposing of leaves, take advantage of these four basic ways in which leaves can be used in the landscape:

##### Mowing

Leaves can be mowed and simply left shredded on the lawn. This technique is most effective when a mulching mower is used. This is probably the most efficient and easiest way to manage leaf accumulation when there is not an overabundance of leaves present.

### Mulching

Mulching is a simple and effective way to recycle leaves and improve your landscape. Mulch reduces evaporation from the soil surface, inhibits weed growth, moderates soil temperatures, keeps soil from eroding and crusting, and prevents compaction. As organic mulch decomposes, it releases valuable nutrients for use by your landscape plants. Leaves can be used as mulch in vegetable gardens, flower beds and around shrubs and trees. Apply a 3 to 6 inch layer of shredded leaves around the base of trees and shrubs.

### Tilling in - Soil Improvement

Leaves may be worked directly into garden soil during the fall. This allows enough time for the leaves to decompose prior to spring planting. A 6-8 inch layer of leaves tilled into a heavy, clay soil will improve aeration and drainage. The same amount tilled into a light, sandy soil, will improve water and nutrient holding capacity. Adding a little fertilizer to the soil after working in the leaves will hasten their decomposition.

### Composting

Soil maintenance is at the heart of organic growing: don't feed the plants, feed the soil the plants will look after themselves.

Knowledge of composting dates back to the early Greeks and Romans. The Arabs kept the science of composting alive during the Dark Ages, and it continued throughout the Renaissance. In America, the value of composting was recognized by George Washington, Thomas Jefferson and George Washington Carver.

Compost is not just decayed organic matter. Composting is applied microbiology at its most complex, involving the interactions of thousands upon thousands of different species of microorganisms (2 million individuals per gram) in a highly complex ecosystem. The composting process kills weed seeds and suppresses human and plant pathogens; that doesn't happen when leaves and other detritus rot down on their own. Once applied, compost balances the soil flora: that is, for each of the scores or more of disease organisms that can affect each species of plant, at least 12 to 15 different species of bio-control microorganisms need to be present, with the food and conditions they require, if the plant is to be healthy. Composting accomplishes that, among other things.

Almost any organic material is suitable for a compost pile. The pile needs a proper ratio of carbon-rich materials, or browns, and nitrogen-rich materials, or greens. Among the brown materials are dried leaves, straw, and wood chips. Nitrogen materials are fresh or green, such as grass clippings and kitchen scraps. In Riverside, kitchen scraps are not recommended because of a potential pest problem. Mixing certain types of materials or changing the proportions can make a difference in the rate of decomposition. The ideal ratio approaches 25 parts browns to 1 part greens. Judge the amounts roughly equal by weight. Leaves represent a large percentage of total yard waste. If you can grind them in a shredder/chipper or mow over them, they will

decompose faster - an issue with larger leaves. They are loaded with minerals brought up from the tree roots and are a natural source of carbon. A few leaf species such as live oak, southern magnolia, and holly trees are too tough and leathery for easy composting. Avoid all parts of the black walnut tree as they contain a plant poison that survives composting. Pine needles need to be chopped or shredded, as they decompose slowly. In very large quantities, they can acidify your compost. Grass clippings break down quickly and contain as much nitrogen as manure. Since fresh grass clippings will clump together, mix them with plenty of brown material. All additions to the compost pile will decompose more quickly if they are chopped up some before adding. Wood ashes from a wood burning stove or fireplace can be added to the compost pile. Ashes are alkaline, so add no more than 2 gallon-sized buckets-full to a pile with 3'x3'x3' dimensions. They are especially high in potassium. Don't use coal ashes, as they usually contain large amounts of sulfur and iron that can injure your plants. Used charcoal briquettes don't decay much at all, so it's best not to use them. Garden refuse should make a trip to the pile. All spent plants, thinned seedlings, and deadheaded flowers can be included.

Did you know? A single spade full of rich garden soil contains more species of organisms than can be found above ground in the entire Amazon rain forest.

## **4.7. Plants to Avoid and Why**

### Cultivars

A cultivar is a cultivated variety of a plant species. Modern cultivars are often, but not necessarily, hybrids between species. Cultivars generally are identified by uniquely distinguishing names, which may be registered and trademarked. The cultivar is indicated by using the abbreviation cv. and/or single quoting the cultivar's name. Many cultivars are naturalized in gardening, planted out and left to their own devices. With pollination and re-growth from seed, true natural processes, the distinct cultivars will over time disappear. Cultivars that have originated as hybrids of different species are exotic, as is a plant from a different continent. They are in itself a threat to a pure species.

### Non-Native Plants

Non-native plants (also called non-indigenous plants, exotic species, or weeds) are plants that have been introduced - both accidentally and deliberately - into an environment in which they did not evolve.

Most of the non-native plant species that have been introduced into the United States are relatively harmless to our native ecosystems. Less than 10%, some 350 of the more than 4,000 alien plant species currently found outside of cultivation in the United States are considered to be invasive. Nevertheless, invasive plant species have a serious negative impact on our economy and environment. Farmers and ranchers spend more than \$5 billion each year in control measures, while the losses to crops and rangeland

productivity account for another \$7 billion. There are approximately 100 million acres of land in the United States that are dominated by invasive non-native plant species and the current yearly increase is estimated at 14%. Invasive plant species become the dominant vegetation on approximately 4,600 acres of public land each day in the United States; this accumulates to nearly 3 million acres each year or a land area that is the approximate size of the state of Connecticut. As a couple of examples to the severity of this problem, purple loosestrife (*Lythrum salicaria*) costs \$45 million year to manage in the 36 states where it occurs. Florida spends \$11 million each year to manage water hyacinth (*Eichhornia crassipes*) and \$28 million to manage tropical soda apple (*Solanum viarum*).

Invasive plants have no natural enemies to controls their spread. Once they take over an area, complex native plant communities, with hundreds of different plant species supporting wildlife, are reduced to a monoculture. This means the ecosystem is simplified, with most plant species disappearing, leaving only the non-native plant population intact. Non-native plants are also responsible for many pollen allergens (e.g., Kentucky bluegrass, Bermuda grass, orchard grass, redtop grass, and timothy grass).

To protect our village from invasive plants, certain species are forbidden on public land, in parks, and on private property.

#### 4.7.3. Plants to **AVOID**

\* trees not allowed in Riverside

# due to emerald ash borer

##### **Trees**

|                     |                               |
|---------------------|-------------------------------|
| Box Elder*          | <i>Acer negundo</i>           |
| Norway Maple        | <i>Acer platanoides</i>       |
| Silver Maple*       | <i>Acer saccharinum</i>       |
| Tree-of-Heaven*     | <i>Ailanthus altissima</i>    |
| White Ash#          | <i>Fraxinus americana</i>     |
| Blue Ash#           | <i>Fraxinus quadrangulata</i> |
| Honey Locust*       | <i>Gleditsia triacanthos</i>  |
| White Mullberry*    | <i>Morus alba</i>             |
| White Poplar*       | <i>Populus alba</i>           |
| Eastern Cottonwood* | <i>Populus deltoides</i>      |
| Common Buckthorn    | <i>Rhamnus cathartica</i>     |
| Smooth Buckthorn    | <i>Rhamnus frangula</i>       |
| Black Locust        | <i>Robinia pseudo-acacia</i>  |
| Willow species*     | <i>Salix</i>                  |
| Siberian Elm*       | <i>Ulmus pumila</i>           |
| Fruit Trees*        |                               |

##### **Shrubs and Ground Covers**

|                  |                         |
|------------------|-------------------------|
| Amur Honeysuckle | <i>Lonicera maackii</i> |
|------------------|-------------------------|

Oriental Bittersweet  
Purple Wintercreeper  
Hybrid Honeysuckle  
Morrow s Honeysuckle  
Tatarian Honeysuckle  
Kudzu

*Celastrus orbiculatus*  
*Euonymus fortunei*  
*Lonicera X bella*  
*Lonicera morrowii*  
*Lonicera tatarica*  
*Pueraria lobata*

### **Perennials and Grasses**

Garlic Mustard  
Canada Thistle  
Bull Thistle  
Cut-leaved Teasel  
Common Teasel  
Leafy Spurge  
Creeping Charlie  
Japanese Knotweed

*Alliaria petiolata*  
*Cirsium arvense*  
*Cirsium vulgare*  
*Dipsacus laciniatus*  
*Dipsacus sylvestris*  
*Euphorbia esula*  
*Glechoma hederacea*  
*Poligonum cuspidatum*



#### **4.8. Disease**

There are two major causes of plant disease: insects and bacteria (or fungi). If you ever notice unknown caterpillars, pupae, or moths on your plants (or public land plantings), immediately contact the Village Forester (phone number at the end of this brochure). It is extremely important to keep an eye on health of plants because diseases spread easily and are hard and expensive to control. They also cause an invaluable loss of mature trees that cannot easily be replaced. Typical signs of a disease are: wilt, browning, or perforation of leaves. Unusual shapes deposited on leaves often mark insect presence.



## ***5. The Right Plant for the Right Place - Before You Plant***

When planting an annual, perennial, or woody plant, there are several steps to make a proper selection for your landscape. The common mistake made by most homeowners is to head out to the local nursery and select a plant based on its appearance. Spring flower, fall color, and winter fruits are but a few of the aesthetic attributes to catch a shopper's attention. Although these attributes are important, they do not determine the ability of the plant to establish and successfully grow in a given location. Before you make a trip to a plant nursery, some homework should be done to determine the proper plant for the location you have in mind. This research will pay off by decreasing the amount of money and time spent on maintaining your new plant of choice. The following approach provides some general considerations to guide you in purchasing a plant that will be successful in your backyard.

### **Step One: Evaluate Your Planting Location**

Environmental Considerations for Plant Selection:

- Light Availability - intensity and duration (full sun versus deep shade)
- Water Availability - the quality (pH, pollutants) and quantity of water
- Exposure - temperature extremes and wind/air movement
- Soil - drainage and compaction of the location, influencing water uptake
- Existing Vegetation - competition for nutrients, water and light
- Hardiness Zone - we are Zone 5; purchase plants numbered 5 or lower

### **Step Two: A Small Tree Today is a Big Tree Tomorrow**

Size Considerations for Location:

- Plant Height and Spread – select a location that will allow the plant to grow into its mature size
- Rooting Space - the below-ground portion of the plant required area
- Environmental Influences - site conditions can alter growth size and shape

### **Step Three: Don't Plant a Problem**

Installation and Maintenance Considerations:

- Site Preparation - improve soil by adding organic matter prior to planting
- Transplantability - certain species tolerate root loss better than others
- Regulations - planting by a sidewalk or a building will require pruning
- Irrigation - reduces watering during summer months
- Resistance - certain varieties of plant species can overcome insect/disease attacks
- Management - the amount of attention the plant will require (pruning, spraying, etc.)

### **Step Four: Plant Appearance**

Aesthetic Considerations:

- Flower-timing and color

- Fruit - winter interest and wildlife benefits
- Foliage - texture, variegation and shape
- Fall Color - leaf drop and color change
- Growth Habit - plants come in many shapes and sizes
- Bark - color and texture

Of course, the final step is the least important but the most enjoyable part of the process. If these general steps are applied to your situation, the amount of time and money spent maintaining the plant will be minimal and your enjoyment will be maximized.

## ***6. Village Contacts***

- Village of Riverside Forester: 442-3590 ext. 502
- Village of Riverside Public Works: 442-3590
- Village of Riverside: 447-2700

## ***7. Riverside Programs***

- Volunteer work days

Maintenance of Riverside's public land while acquiring education about local natural environment - for information contact Village Forester or Olmsted Society Landscape Chairman [www.olmstedsociety.org](http://www.olmstedsociety.org).

- Cost-sharing tree planting program

The Village and interested residents share 50/50 cost of planting trees on public land - for information contact Village Forester or Village of Riverside

- "Adopt a Park"

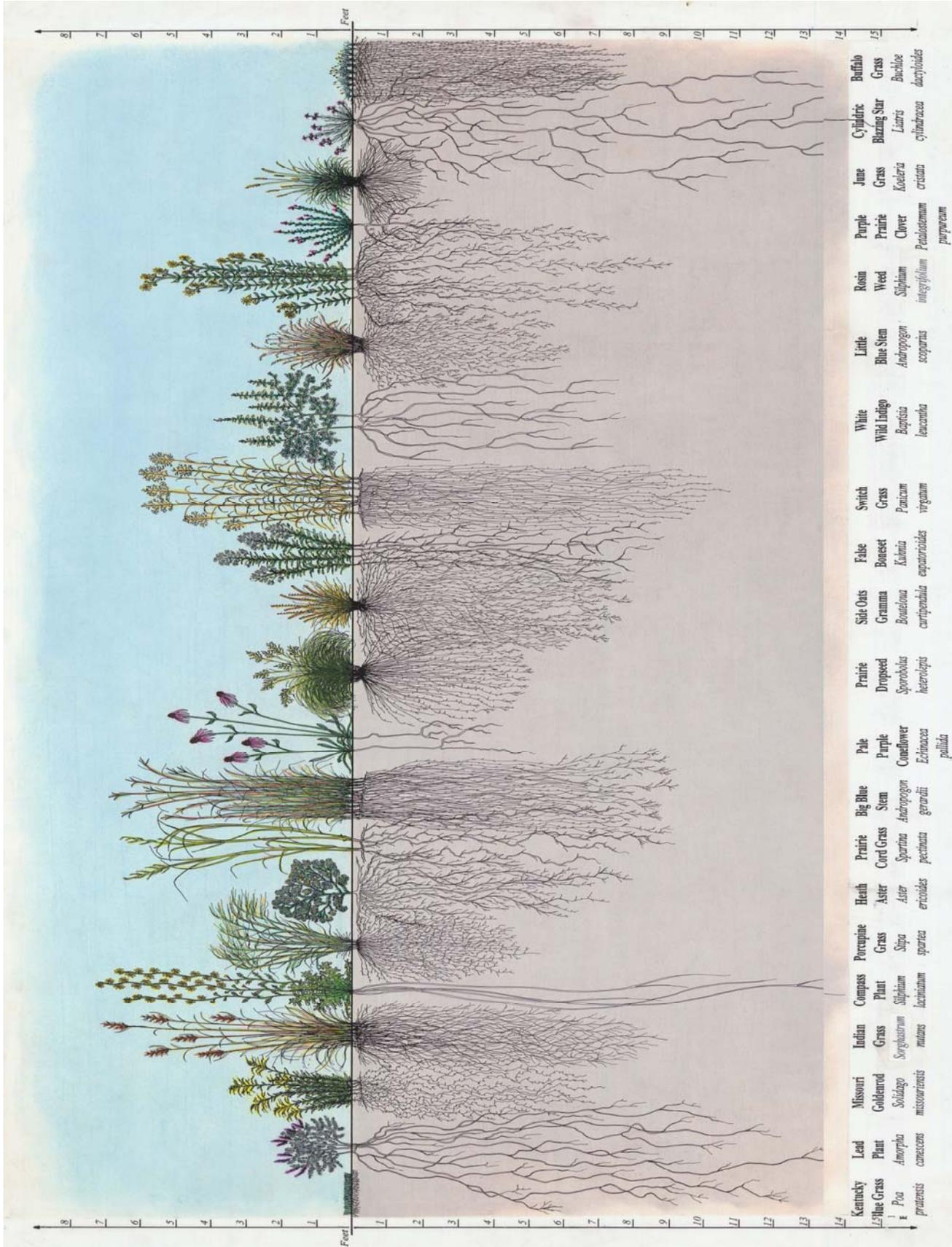
For details contact the Village Forester at 442-3590 ext. 502.

From the Village Municipal Code: (8-5-7: COST-SHARING TREE PLANTING PROGRAM: "There is hereby established a Share-The-Cost Parkway Tree Planting Program, to be administered by the Village Manager or his designated representative. Said Program shall be voluntary and shall involve the planting of parkway trees upon the parkways in front of residential properties within this Village, at the request of the residence owner and the payment by the owner of fifty percent (50%) of the cost of said tree and the planting thereof; the remaining fifty percent (50%) of the cost of said tree and the planting thereof to be borne by the Village. No such parkway tree planting shall be undertaken under this cost-sharing program unless an amount to cover the Village's portion of said cost has been first duly appropriated and the Village has designated the parkway areas to receive trees and the types of trees to be planted in such areas; nor shall such cost-sharing program interfere with or otherwise restrict the Village from

engaging in parkway tree planting separate and independent of resident owner participation. All such parkway trees planted pursuant to this voluntary cost-sharing program shall be and remain the property of the Village.” (Ord. 1816, 8-15-1988))

Information for this brochure came from various sources, among them: Riverside Village Forester, EPA, Chicago Wilderness, Wild Ones, The Agriculture Program of the Texas A&M University System, Illinois Native Plant Society, and Village of Riverside Municipal Code.





Conservation Research Institute  
 Field Notes 1995

Root Systems of Prairie Plants