

Johnson County Sustainable Lawn and Landscape Plan



By Planning, Development and Sustainability; Physical Plant

**MARCH
2017**

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SUMMARY

The County Board of Supervisors wants to reduce the use of chemicals on landscapes around County-owned buildings and decrease the amount of standard turf. Staff from different departments met to carry out the Board's request to create a policy on vegetation control. Given unique conditions and challenges around the County's diverse building sites, staff recommended deferring policy development. The Board agreed that a plan could be developed that includes pilot practices to see what works then base a policy on results. The Board asked staff to develop the plan in-house. This plan is the result of that effort. Key input:

- Interviews/discussion with Physical Plant, Conservation and Roadside Vegetation (Weed Commissioner),
- Tour of City of Iowa landscapes (summer 2016) by Physical Plant + Sustainability Staff
- Research and walking of grounds by Sustainability Coordinator, Soil and Water Conservation (SWC) Coordinator, Physical Plant Staff
- Contact with Kamyar Enshayan, director, Center for Energy and Environmental Education, UNI

Buildings

All addresses are in Iowa City.

Administration Building (Admin)

913 S. Dubuque St.

Ambulance (under construction)

808 S. Dubuque St.

Courthouse, 416 S. Clinton St.

Health and Human Services Building (HHS)

855 S. Dubuque St.

Jail/Sheriff, 511 S. Capitol St.

Secondary Roads/SEATS aka West Campus

4810 Melrose Ave.

Objectives and Benefits

1. Eliminate chemical use except for exceptional needs.
2. Prioritize best management practices, including practices that
 - a. Reduce greenhouse gases
 - b. Control erosion
 - c. Improve recovery from winter (ice, salt, etc.)
 - d. Potentially provide native habitat/edible landscapes.
3. Coordinate County overall and building-specific stormwater plans to achieve these results:
 - a. Reduce heat islands/effects
 - b. Improve soil quality and stormwater runoff quality while reducing overall stormwater quantity
4. Improve appearance of grounds.
5. Promote pedestrian/outdoor activity and safety.
6. Educate the public, staff, others.

Elements

- Best Management Practices (BMPs) for lawn maintenance, soil health and water quality
- Guidance on limited/spot use of selected chemicals
- List of types of landscaping to replace lawn, including viable vegetative species non-invasive and consideration of edible species
- Snow removal practices
- Training and scope of responsibility
- Potential BMP showcases, including signage and educational components
- Potential partnerships with governmental or non-governmental organizations

BACKGROUND

In 2015, in part due to residents' inquiries, the Board of Supervisors discussed the use of chemicals, or pesticides,¹ on lawns around County-owned buildings, especially those in urban settings. The Board directed staff to review current practices and consult with Roadside Vegetation, Conservation, the Green Team and others to develop a policy aimed at using fewer chemicals. The potential vegetation control policy would apply to County-owned buildings not including Conservation. The potential policy would not affect the County's Integrated Roadside Vegetation Management Plan, which the Secondary Roads Department prepares and manages.

Staff consulted with colleagues and found a few examples of reduced lawn chemical use by other local governments. The Sustainability Coordinator, SWC Coordinator and Physical Plant Manager met, as well. Staff [researched current practices and products used](#) on County properties. Due to unique conditions and challenges at each site, staff found it would be difficult to create immediately a policy that could successfully address the issues at hand.

In spring 2016, staff recommended deferring on developing a policy and

¹ "Pesticides" is a broad term that can refer to herbicides, insecticides, fungicides, rodenticides, defoliants and other plants regulators, and fertilizers. However, many people use it to refer only to herbicides, so we refer generally to "Chemicals" in this plan to include *all* pesticides.

instead, developing a plan that includes guidance and pilot test areas to reveal what practices are successful. A policy and practice guidelines could then be created based on proven success. Staff also asked about hiring a consultant to develop this overall landscape and maintenance plan. The Board asked staff to develop the plan in-house.

ADDITIONAL INFORMATION

In fall 2015, the SWC Coordinator (Kate Giannini) informally inquired from local contractors about maintenance for stormwater best management practices (e.g., bio-retention cell, permeable pavement) at the Administration Building and the Health and Human Services Building. Services from the different contractors were not comparable, and showed staff that an overall landscape maintenance plan is needed.

Sustainability Coordinator (Becky Soglin) attended a fall 2015 presentation by Kamyar Enshayan, UNI expert, on reducing chemical uses; follow-up email contact in fall 2016.

The Soil and Water Conservation Coordinator, Sustainability Coordinator and County Weed Commissioner met in May 2016 to work on additional details.

Staff from Physical Plant and Sustainability met with City of Iowa City staff in summer 2016. Staff held internal discussions in fall 2016.

FUNDING

Some funding for lawn and landscape changes will come from the Sustainability and Energy Reinvestment Fund (SERF). In addition, some practices, such as reduced mowing, might reduce fuel costs, and funds could be redirected to plantings and other features. The funding and technical assistance section provides additional details.

CURRENT PRACTICE

Johnson County downtown buildings

These landscape care practices are currently used around County buildings:

- Mowing and weeding “as needed” by staff.
- Spring, summer and, until 2016, fall applications of weed control and fertilizer by a local vendor following Integrated Pest Management. This means only weeds present are treated (no blanket weed control is used unless needed). The main weed control used was Tri-Power. The fertilizer used was 15-0-5 N-P-K, or Nitrogen-Phosphorous-Potassium. Thus, no phosphorous was used. The amount of fertilizer used depended on the time of year and lawn needs.
- A lawn growth retardant is used on the steep slopes around the Courthouse to minimize the need for mowing.

- In general, soil around County buildings is poor.
- The SWC Coordinator prepares stormwater plans for each building.

In addition, **Roadside Management** uses these practices:

- Use of buffalo grass
- Prairie or natural plantings
- Adherence to Iowa City Natural Areas Policy
- Shrubs, narrow strips
- Transition areas of 1/8 acre
- Pathways around natural areas
- Avoidance of non-native ground covers such as vinca (periwinkle)
- Roadside Vegetation Policies: *Noxious Weeds, Brush Control, Native Plant Community Policy*

Practices in Other Jurisdictions/States

- Iowa City adopted a vegetation control chemical policy for city property in 2016 ([Appendix F](#))
- The Iowa City Community School District (ICCSA) is testing “no chemical” approaches
- Holganix approach used by U-Iowa
- Cedar Falls reductions for city land, such as playing fields
- Iowa preemption to prevent restrictions on pesticide use.
- Connecticut municipalities banned lawn chemicals on school grounds (2009)
- Marblehead, Mass. Banned “toxic pesticides” on town-owned land (2001).
- Maryland: Takoma Park restriction on public and private land (2013)

PROPOSED ACTIONS AND GUIDANCE

Staffing/Training

Recommendation: Revise existing Physical Plant positions with approval from the union and the Board of Supervisors or create a new position(s), with Union input, with responsibility for seasonal duties approximately April 15 to October 15.² Or use contracted services, as needed.

Skills Needed

1. Pest management (requires state approved training and certification)
2. Stormwater practices used at county sites, bio-retention cell maintenance and snow removal techniques
3. Turf replacement
4. Native landscaping planting and upkeep

Duties

1. Regular care for the current and any future bio-retention cells and/or annual **primary** maintenance is contracted out and ongoing maintenance is provided by Physical Plant or contracted out.

² The Roadside Manager suggested training at least two physical plant staff in each of the tasks listed. However, Union positions, as is, do not allow addition of these tasks. Shared seasonal labor with Iowa City was discussed but deemed not feasible. Iowa City's summer seasonal staffing is two temps at 24 hours per week and one FTE.

2. Maintenance of turf grass alternatives. Newly planted areas may have one to two years of greater initial maintenance. Thereafter, it should even out in terms of workload (time to weed/maintain = time otherwise taken to mow)
3. Possible special projects by student practicums (see Technical Support section). However, need reliable, ongoing option for regular care.

Training

- Chris Henze, Roadside Manager, and Kate Giannini, SWC Coordinator could provide internal educational training
- Attend Rainscaping Iowa webinars or events
- Review educational materials
- Johnson County should consider becoming an [Iowa Stormwater Education Partnership](#) (ISWEP) member

Budgeting

Physical Plant should figure regular care for the following features into annual budget (a "grounds fund").

- Porous pavement and permeable cleaning
- Bioretention cell upkeep and other types of landscape work.
- Upkeep for new features as they are treated

SWC Coordinator is getting a quote for one-time **restoration** for the existing cell. This project and FY18 maintenance will be paid for from the internal Sustainability + Energy Fund. Thereafter, upkeep funds should be in Physical Plant budget.

Certain other special projects can seek initial funding from Sustainability + Energy Fund. Thereafter, maintenance funds should be added to “grounds fund” in Physical Plant. Discuss budgeting each fall as part of normal budgeting. See also Funding and Technical Support section.

Turf

TURF (mechanical mowing)³

1. Discontinue mowing in any areas where mowing could be forgone completely. (Unlikely to include many, if any, areas.)
2. Reduce mechanical mowing: Mow only when needed.
3. Mow no lower than 3” to 3.5”

TURF (management)

1. Do not use chemicals except to treat extreme invasives (e.g. wild parsnip or poison ivy) that cannot be controlled by hand pulling
2. Consider not seeding turf grass within one foot of a fence line or structure. Replace with gravel strip or other mulch.
3. Where possible do soil quality restoration (method 8). Deep-tine aerate (6” to 9” deep), top dress with compost and over-seed every three to five years. Soil and Water Conservationist to identify areas for treatment (stormwater management plans).

³ “Mowing” can include not only mechanical but also fire, chemical and cultural approaches.

TURF MANAGEMENT (alternatives to chemicals)

- Competitive plantings
- Pulling
- Determine best timing to maximize the effects of any practice
- Methods *not* to use: scald; salt, borax, vinegar.
- Buffalo grass is not a good option for our area; high maintenance in prairie settings.

Turf Replacement and Low-Maintenance Plantings

CONSIDERATIONS WHEN SELECTING PLANTS/GRASSES

1. Native/naturalized/invasive tendency
 - a. Do not plant invasives as defined by County Weed Commissioner/State of Iowa.⁴
 - b. Avoid planting invasives, (e.g. burning bush), per Bur Oak Land Trust (formerly Johnson County Heritage Trust) See [Appendix B](#).
2. Salt tolerant perennials. Annuals often fail in salt-impacted areas and are time-consuming to install. [See Appendix C](#).

⁴ See website “Noxious and Invasive Weeds of Johnson County: http://www.johnson-county.com/dept_sec_roads.aspx?id=1485; Iowa DNR: <http://www.iowadnr.gov/Conservation/Forestry/Forest-Health/Invasive-Plants>; and [Appendix A](#) in this document.

3. Planting beds uniformity (e.g. Courthouse, Sheriff's Bldg, Admin/HHS). This will provide a unifying appearance and potentially lower costs.
4. Maintenance requirements. Consider *Know Maintenance Perennial Garden* practices (used by the City of Iowa. [See Appendix D.](#)) The idea is to use three to ten plants from 72 types the author identifies. Plantings are closer together than label instructs, e.g. 24" instead of 18". In the fall, leave the plant material. In the spring, cut or mow the plantings down to 4" inches and leave the clippings **instead of using mulch**. Some weeding required the first two years when the plants are small (Fig. 1) but little to none later.
5. Hardiness
6. Height (consider sight lines, access)
7. Animal resistance (e.g. deer, rabbit)
8. Aesthetics
9. Drought-resistance
10. [Plantings in the Right of Way](#): Consult the City re trees; for plants/shrubs: nothing taller than 2' feet above curb height can be planted; leave 2' clearance inside curb and inside sidewalk (e.g. 6' wide grassed ROW can only use the middle two feet).
11. Consider Iowa City Screening and Buffering Standards (14-5F in [code](#)); be aware of Intersection Visibility Standards.
12. Consider City of Iowa City plantings list: [Appendix E](#). (Best to contact horticulturalist for current list.)
13. Consider plants used at Iowa City Eastside Recycling Center: <http://www.iowa-city.org/weblink/0/doc/1530572/Electronic.aspx>
14. Consider Backyard Abundance tips: <http://www.backyardabundance.org/Resources/Natives.aspx>

Figure 1: Washington Street median using *Know Maintenance* approach (City of Iowa City).



Trees

1. Maintain tree log for diversification (duty for seasonal/other position)
2. Create maintenance schedule
3. Do not mound mulch
4. Use protectors around tree so no mower damage
5. Consider applying to MidAmer. Energy for tree funds. Requires internal budget line for trees.
6. Columnar trees may be an option in tight spaces (Appendix E).

PLANTING BEDS OR AREAS

1. Right plant in the right place.
2. See information above regarding *Know Maintenance* approach and “natural” mulch method.
3. If using purchased mulch, place sufficient amount as early as possible in the season to suppress weeds.

PLANT ISLANDS (parking areas)

1. Initially plant only trees and not plants to minimize maintenance but mulch heavily.
2. Later can add plants with care not to damage roots.

Water and Stormwater

The SWC Coordinator addresses stormwater in an overall plan and building specific plans. Admin, HHS, and Secondary Roads Shed Sites. (See Johnson-county.com/stormwater for links to these files.) This section highlights features.

IRRIGATION

1. The County already avoids using irrigation; it will be used only when absolutely necessary (such as establishing plants).
2. Use drought-resistant landscaping as much as possible
3. Use reclaimed water for irrigation when possible

BIOSWALES / BIORETENTION (rain garden)

1. Erosion and weeds: need one-time rehab, as noted earlier.
2. Regularly maintain. Getting quotes. Requires funds or staff to take care

of it regularly or to pay for someone external to care for it

PERMEABLE PAVERS AT HHS and POROUS CONCRETE AT ADMIN

1. Hire vacuum services annually (see stormwater plan maintenance schedule). City of Coralville is willing to provide this service at a cost of \$200/hour including the operator.
2. Sustainability fund will cover FY17 and FY18. Beyond, figure into Physical Plant annual budget.

Snow Removal

- Identify specific areas in and around lots to place plowed snow.
- Follow deicing rules to avoid damaging plants. (Ice melt, when necessary, is used for safety.)
- Consult salt-tolerant trees and shrub: salt-intolerance tree lists.
- Plant salt-tolerant foliage in areas that receive a lot of salt.

Hardscapes

- Permeable pavement is not difficult to plow.
- Poured concrete with stamped brick patterns is an alternative but this must be balanced with water infiltration goals.

Employee and Public Awareness

- Use signage and periodic events to help educate others about native landscaping and stormwater practices.

Funding and Technical Resources

Funding Possibilities

“Grounds Fund” to be created within Physical Plant budget

County’s internal Sustainability and Energy Reinvestment Fund for the initial or incremental cost of adding stormwater BMPs and native landscaping

Iowa DNR-REAP the state’s Environmental First Fund

Community Foundation of Johnson County

Johnson County Soil and Water Conservation District REAP cost-share program

Iowa Department of Agriculture and Land Stewardship No-Low interest loans Stormwater Program

Iowa Department of Agriculture and Land Stewardship Water Quality Urban Conservation Demonstration Grant Funding

MidAmerican Energy provides a tree cost-share program; we must have budget line for landscaping/grounds to take advantage of their offering. Usually a December deadline.

Environmental Advocates Grant Program

Technical Resources

Backyard Abundance could provide reasonably priced assistance on small select areas.

Portfolio of designs that could be adapted: <http://www.backyardabundance.org/Services/Portfolio.aspx>

Kirkwood Community College horticulture students could possibly design and install an area as a practicum, or students from the **UI environment course** area.

Explore whether *seasonal workers* vetted by **Conservation** with landscape knowledge could possibly assist during the time when conservation need is lessened.

Kamyar Enshayan, director, the UNI Center for Energy and Environmental Awareness, recommends listing properties by type and implementing practices over a three-year period, working towards no chemicals. (We had used a similar approach by identifying building-specific areas.) A policy could include unforeseen circumstances that allow chemicals.

Consult with the **Iowa City Community School District** about their experience in reducing / no chemicals in outdoor areas. Their test efforts are still underway as of fall 2016 and into the coming year.

Consult with the **City of Iowa City** regarding their new “Vegetation Control Chemicals on City Property”; continue to learn about plantings and practices by Iowa City grounds staff.

BUILDING-SPECIFIC PLANS

Aim to have uniformity for planting beds at Admin, HHS, Courthouse, Sheriff's Buildings.

SERF = Sustainability + Energy Reinvestment Fund

Administration Building and Environs

Stormwater plan exists

Location	Status/Concern	Proposed Action	Costs	Implement
South Field	Compacted Soil	Soil quality restoration + low-grow no mow grass	\$5,000	Completed
Bio-Retention Cell	Snow pile with salt/pollutants drains into bio-retention cell at south end of employee lot	Work with Physical Plant to find best dumping area. (Part of stormwater plan.)	tbd	FY18
Bio-Retention Cell	Weeds	Re-hab needed. Thereafter, Physical Plant regular weeding schedule or hire group to come in regularly to do.	Quotes sought early spring 2017	Late FY17 or early FY18 for redo
Employee and Public Parking Lot + Perimeter	Weeds. Tree needs in some islands.	Physical Plant to provide regular weeding schedule; contract out; need to add plantings to fill in spaces.	MidAmerican has tree cost-share program. SERF first year.	
Public Parking Lot Perimeter	Slope /erosion along eastern edge	Add retaining wall from approximately center island of most eastern row to curve, with top buffer to adding plants (potentially weeping type or phlox).	tbd. SERF can be used for plantings.	tbd
Main Entrance to Building	Grass damage/lack of plantings due to construction. Yews are old	Take out yews. Maybe add spirea back in. Could add Canadian wild ginger as ground cover plus more hosta and natives to shaded area and/or native plantings.	tbd. Could use SERF.	FY17-18
Veterans Memorial	Screening needed for solar array fences; also Gary has a concept to add a raise bed planting south side of the memorial	Screening to be designed by Physical Plant in conjunction with Sustainability staff.	Can use SERF for screening; other project (raise bed) needs input from VA.	Late FY16-17 or early FY17-18

Health and Human Services Building and Environs (HHS)

Stormwater Plan Exists

Location	Status/Concern	Proposed Action	Costs	Implement
East side of building and parking ramp	No vegetation except grass.	Maintain as is. There are too many utilities in the area for plantings to be added. EXCEPTION: Where the ramp is to the JV entrance, could add a new bed that coordinates with another.	tbd	Long-range
South side of building	Few trees	Maintain; Physical Plant does not recommend adding trees.	-----	-----
West side of building	Only one aging tree	Maintain as is; reduce risk of invasive roots into utility vaults	-----	-----
North side of building	Grass only	Keep as is for now. May eventually put into plantings	tbd	Long-range
North side of <i>parking ramp</i>	No foliage; only grass	We own only 2.5 feet north of the parking ramp structure. We mow it all, however.	No new costs.	Status quo

Courthouse

Stormwater Plan Will Be Developed

Location	Status/Concern	Proposed Action	Costs	Implement
Slopes where growth retardant is used	Dangerous mowing angle	Mow carefully.	Current (in Physical Plant budget)	Status quo
East side of building	Not used as main entrance anymore but need to keep sightlines for security – be aware for any future landscaping	No changes at this time.	-----	-----
New ADA access	Will have a planting bed incorporated into the design	Create planting bed.	tbd. Use SERF	FY18

Secondary Roads and SEATS Administration Building

This building does not yet have a stormwater plan. The sheds do, however.

Location	Status/Concern	Proposed Action	Costs	Implement
Not yet reviewed for detail		MAY NEED MORE STAFFING HERE TO TAKE CARE OF PLANTINGS	Tbd.	tbd

Sheriff's Office and Jail

Stormwater plan will be developed.

Location	Status/Concern	Proposed	Costs	Implement
Small area to north	Needs new landscaping. Planter is needed to double as a security barrier	Shari, Kate, Becky to discuss March 2017. Maybe could use cannas.	tbd. Use SERF. Iowa City might have cannas to give us	Spring 2017 or FY18

Sources Consulted

City of Iowa City staff, including Tyler Baird, horticulturist

Enshayan, Kamyar. Presentation, fall 2015, and Email correspondence, fall 2016

Grassman, Chris. "Landscaping With Snow Removal in Mind." Website; Grounds Maintenance for Golf and Green Industry Professionals. Accessed June 28, 2016.
http://grounds-mag.com/snow_ice/2004_november_landscaping/

Diblik, Roy. *The Know Maintenance Perennial Garden*. Timber Press, 2014.

Henze, Chris. Johnson County Weed Commissioner. Interviews, fall 2015 and May 2016.

Johnson County Conservation Staff members, fall 2015 and spring 2016

King County Facilities Green Operations and Maintenance Guidelines Handbook (2008).
<http://your.kingcounty.gov/solidwaste/greenbuilding/documents/o-m-guidelines-2011.pdf>

Onondaga County Climate Action Plan, April 2012 [New York].
<http://www.ongov.net/environment/documents/CAP2012.pdf>

Appendix A: Noxious and Invasive Species

List of Noxious and Invasive Weed Species to Be Controlled is Appendix A of the Noxious Weed Policy: <http://www.johnson-county.com/WorkArea/DownloadAsset.aspx?id=1489>
Excerpts below:

The Iowa Department of Agriculture and Land Stewardship and the Code of Iowa have declared 27 species of plants as noxious weeds which need to be controlled. Johnson County lists an additional 4 species of noxious weeds to be controlled. The following weeds have been declared noxious by the State of Iowa:

Buckhorn Plantain	<i>Plantago lanceolata</i>
Buckthorn	<i>Rhamnus</i> species
Bull Thistle	<i>Cirsium vulgare</i>
Butterprint (Velvetleaf)	<i>Abutilon theophrasti</i>
Canada Thistle	<i>Cirsium arvense</i>
Cocklebur	<i>Xanthium strumarium</i>
Field Bindweed	<i>Convolvulus arvensis</i>
Horse Nettle	<i>Solanum carolinense</i>
Leafy Spurge	<i>Euphorbia esula</i>
Multiflora Rose	<i>Rosa multiflora</i>
Musk Thistle	<i>Carduus nutans</i>
Perennial Peppergrass (Hoary Cress)	<i>Cardaria draba</i>
Perennial Sow Thistle	<i>Sonchus arvensis</i>
Poison Hemlock	<i>Conium maculatum</i>
Puncture Vine	<i>Tribulus terrestris</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Quackgrass	<i>Agropyron repens</i>
Red Sorrel (Sheep Sorrel)	<i>Rumex acetosella</i>
Russian Knapweed	<i>Centaurea repens</i>
Shattercane	<i>Sorghum bicolor</i>
Smooth Dock (Pale Dock)	<i>Rumex altissimus</i>
Sour Dock (Curly Dock)	<i>Rumex crispus</i>
Tall Thistle	<i>Cirsium altissimum</i>
Teasel	<i>Dipsacus</i> species
Wild Carrot (Queen Anne's Lace)	<i>Daucus carota</i>
Wild Mustard	<i>Brassica kaber</i>
Wild Sunflower	<i>Helianthus annuus</i>

In addition to the State of Iowa Noxious Weed List, Johnson County lists an additional 4 species of noxious weeds. These species are listed below:

Japanese Knotweed
Marijuana

Polygonum cuspidatum
Cannabis sativa

05/10/01

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Poison Ivy
Wild Parsnip

Toxicodendron radicans
Pastinaca sativa

This is a list of plant species which are considered invasive or aggressive by the Johnson County IRVM Program and County Weed Commissioner. These species are unsuitable for use or growth in roadside plant communities. Because of concern for their spread into public right of ways, planting these species in adjacent private lands is discouraged. This plant species list is not all-inclusive, and may be edited to include or remove certain species as conditions or situations dictate.

Pampas Grass
Garlic Mustard
Crown Vetch

Miscanthus species
Alliaria petiolata
Coronilla varia

Also "Invasive Weed Species to Be Controlled": http://www.johnson-county.com/dept_sec_roads.aspx?id=19642

Excerpt:

This is a list of plant species which are considered invasive or aggressive by the Johnson County IRVM Program and County Weed Commissioner. These species are unsuitable for use or growth in roadside plant communities. Because of concern for their spread into public right of ways, planting these species in adjacent private lands is discouraged. This plant species list is not all-inclusive, and may be edited to include or remove certain species as conditions or situations dictate.

[Autumn Olive](#) (Elaeagnus umbellata) 
[Black Locust](#) (Robinia pseudoacacia) 
[Bush Honeysuckle](#) (Lonicera spp) 
[Canada Thistle](#) (Cirsium arvense) 
[Chinese Bush Clover](#) (Sericea lespedeza) 
[Common and Glossy Buckthorn](#) (Rhamnus cathartica & Rhamnus frangula) 
[Common Reed Grass](#) (Phragmites australis) 
[Common Teasel](#) (Dipsacus fullonum) 
[Crown Vetch](#) (Coronilla varia) 
[Garlic Mustard](#) (Alliaria petiolata) 
[Japanese Barberry](#) (Berberis thunbergii) 
[Japanese Knotweed](#) (Polygonum cuspidatum) 
[Leafy Spurge](#) (Euphorbia esula) 
[Multiflora Rose](#) (Rosa multiflora) 
[Oriental Bittersweet](#) (Celastrus orbiculatus) 
[Purple Loosestrife](#) (Lythrum salicaria) 
[Reed Canary Grass](#) (Phalaris arundinacea) 
[Smooth Brome](#) (Bromus inermis) 
[Plumeless and Musk Thistle](#) (Carduus acanthoides, Carduus nutans) 
[Tree of Heaven](#) (Ailanthus altissima) 
[Wild Parsnip](#) (Pastinaca sativa) 
[Yellow and White Sweet Clover](#) (Melilotus officinalis and Melilotus alba) 

**Appendix B: Johnson County
Recommended Planting List by Bur
Oak Land Trust**

Formerly Johnson County
Heritage Trust

Johnson County Recommended Planting List

Presented as a service to our community by
Johnson County Heritage Trust



P. O. Box 2523
Iowa City, IA 52244-2523

www.jcht.org
info@jcht.org

This listing is meant to guide the selection of landscaping trees, shrubs, grasses and forbs in Johnson County. We hope that it provides you with a useful tool for enhancing your property while simultaneously safeguarding our local native plants and communities.

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Why a Johnson County Recommended Planting List?

Landscaping trees, shrubs, forbs and grasses can easily impact surrounding wildlands. This is especially true in Johnson County, where many homesites are interspersed with native woodlands and other natural sites. Here aggressive non-native plantings can easily invade natural communities where they eventually eliminate native trees, shrubs, grasses and forbs, along with the birds and other animals dependent on them.

This listing of landscaping plants was prepared to help eliminate such unintended but destructive situations. The listing encourages the planting of native species (that is, plants that have grown in this region of the country for hundreds or thousands of years). These plants are best adapted to the local climate and soils and are well received by wildlife and birds, which use them for food and nesting sites. They are best suited to provide important ecological services, such as enhancing soils and fostering diverse and healthy natural communities. Listed natives will not become invasive or noxious threats to surrounding lands.

When purchasing native plants or seeds, we encourage avoiding cultivars whenever possible, and purchasing local genetic ("local ecotype") stock when available. Local ecotype prairie seed is now sold by many reputable nurseries. Local ecotype seed of other types of plants will become more available in coming years.

Sometimes native plants do not thrive on today's altered sites. Thus listings of non-native alternatives for such sites have also been included. Listed species have not shown signs of becoming invasive, at least at present.

And last, listings of plants that are invasive or otherwise problematic have been included. These should never be planted.

TREES

Note: "Small tree" is typically less than 30 feet in height; "large tree" is typically taller.

RECOMMENDED NATIVE TREES: WELL-DRAINED SOILS

Disease-tolerant selections of American elm (<i>Ulmus americana</i>)	large tree
basswood (<i>Tilia americana</i>)	large tree
bigtooth aspen (<i>Populus grandidentata</i>)	large tree
black cherry (<i>Prunus serotina</i>)	large tree
black maple (<i>Acer nigrum</i>)	large tree
black oak (<i>Quercus velutina</i>)	large tree
black walnut (<i>Juglans nigra</i>)	large tree
bur oak (<i>Quercus macrocarpa</i>)	large tree
chinkapin oak (<i>Quercus muehlenbergii</i>)	large tree
eastern redcedar (<i>Juniperus virginiana</i>)	small or large tree
hackberry (<i>Celtis occidentalis</i>)	large tree
cockspur hawthorn (<i>Crataegus crusgalli</i>), downy hawthorn (<i>Crataegus mollis</i>), and other native hawthorns	small tree
honey locust (<i>Gleditsia triacanthos</i>), thornless and seedless varieties only	large tree
Kentucky coffeetree (<i>Gymnocladus dioica</i>)	large tree
native crabapple (<i>Malus ioensis</i>)	small tree
pagoda dogwood (<i>Cornus alternifolia</i>)	small tree

quaking aspen (<i>Populus tremuloides</i>)	large tree
redbud (<i>Cercis canadensis</i>)	small tree
red oak (<i>Quercus rubra</i>)	large tree
serviceberry (<i>Amelanchier arborea</i>)	small tree
shagbark hickory (<i>Carya ovata</i>)	large tree
sugar maple (<i>Acer saccharum</i>)	large tree
white oak (<i>Quercus alba</i>)	large tree

RECOMMENDED NATIVE TREES: SOMEWHAT POORLY TO POORLY DRAINED SOILS

black willow (<i>Salix nigra</i> Marsh.)	large tree
cottonwood (<i>Populus deltoides</i>)	large tree
northern pecan (<i>Carya illinoensis</i>)	large tree
pin oak (<i>Quercus palustris</i>)	large tree
river birch (<i>Betula nigra</i>)	large tree
shellbark hickory (<i>Carya laciniata</i>)	large tree
shingle oak (<i>Quercus imbricaria</i>)	large tree
silver maple (<i>Acer saccharinum</i>)	large tree
swamp white oak (<i>Quercus bicolor</i>)	large tree
sycamore (<i>Platanus occidentalis</i>)	large tree

ACCEPTABLE NON-NATIVE TREES: WELL-DRAINED SOILS

arborvitae (<i>Thuja occidentalis</i>)	small tree
Black Hills spruce (<i>Picea glauca 'densata'</i>)	large tree
concolor fir (<i>Abies concolor</i>)	large tree
ginkgo - male selection (<i>Ginkgo biloba</i>)	large tree
Norway spruce (<i>Picea abies</i>)	large tree
white pine (<i>Pinus strobus</i>)	large tree
white spruce (<i>Picea glauca</i>)	large tree

ACCEPTABLE NON-NATIVE TREES: SOMEWHAT POORLY TO POORLY DRAINED SOILS

baldcypress (<i>Taxodium distichum</i>)	large tree
larch (<i>Larix</i> spp.)	large tree

TREES THAT SHOULD NEVER BE PLANTED

black locust (<i>Robinia pseudoacacia</i> L.)	invasive
catalpa (<i>Catalpa speciosa</i>)	invasive
Chinese elm (<i>Ulmus parvifolia</i>)	invasive
elm hybrids (<i>Ulmus</i> hybrids)	invasive
Russian olive (<i>Elaeagnus angustifolia</i>)	invasive
Siberian elm (<i>Ulmus pumila</i>)	invasive
tree of heaven (<i>Ailanthus altissima</i>)	invasive

Additional Species of Concern -

- Norway maple selections (*Acer platanoides*) and amur maple (*Acer tataricum* subsp. *ginnala*) are showing signs of becoming invasive on Iowa's native lands. They should never be planted in or near natural areas, parklands, or other non-landscaped rural or semi-urban sites.
- Ash species (*Fraxinus* spp.) are native but have serious disease and insect problems.

SHRUBS

To ensure the best landscaping results, be sure to match shrub selections to your soil drainage, sunlight, and other site conditions that affect growth.

RECOMMENDED NATIVE SHRUBS

- American black currant (*Ribes americanum*)
- American bladdernut (*Staphylea trifolia*)
- American elder (*Sambucus canadensis*)
- American hazelnut (*Corylus americana*)
- American plum (*Prunus americana*)
- atlantic leatherwood (*Dirca palustris*)
- Canada yew (*Taxus canadensis*)
- Carolina rose (*Rosa carolina*)
- *common buttonbush (*Cephalanthus occidentalis*)
- common juniper (*Juniperus communis*)
- common ninebark (*Physocarpus opulifolius*)
- cranberrybush viburnum (*Viburnum trilobum*)
- early wild rose (*Rosa blanda*)
- fragrant sumac (*Rhus aromatica*)
- gray dogwood (*Cornus racemosa*)
- *indigobush (*Amorpha fruticosa*)
- leadplant (*Amorpha canescens*)
- Missouri gooseberry (*Ribes missouriense*)
- *meadowsweet spirea (*Spiraea alba*)
- nannyberry (*Viburnum lentago*)
- New Jersey tea (*Ceanothus americanus*)
- potentilla (*Potentilla fruticosa*)
- prairie rose (*Rosa setigera*)
- prairie willow (*Salix humilus*)
- *pussy willow (*Salix discolor*)
- *redosier dogwood (*Cornus stolonifera*)
- rough-leaved dogwood (*Cornus drummondii*)
- shrubby St. Johnswort (*Hypericum prolificum*)
- silky dogwood (*Cornus amomum*)
- smooth sumac (*Rhus glabra*)
- staghorn sumac (*Rhus typhina*)
- wafer ash (*Ptelea trifoliata*)
- wahoo (*Euonymus atropurpurea*)
- winterberry (*Ilex verticillata*)
- witch hazel (*Hamamelis virginiana*)

*shrubs that prefer wet soils

ACCEPTABLE NON-NATIVE SHRUBS

- arrowwood viburnum (*Viburnum dentatum*)
- bottlebrush buckeye (*Aesculus parviflora*)
- boxwood species (*Buxus* spp.)
- flowering almond (*Prunus triloba*)
- forsythia (*Forsythia* spp.)
- hibiscus species (*Hibiscus* spp.)
- hydrangea species (*Hydrangea* spp.)
- lilac species (*Syringa* spp.)
- mock orange (*Philadelphus pubescens*)

- nanking cherry (*Prunus tomentosa*)
- northern bayberry (*Myrica pennsylvanica*)
- rugosa rose (*Rosa rugosa*)
- spicebush (*Lindera benzoin*)
- spirea species (*Spiraea* spp.)
- summersweet clethra (*Clethra alnifolia*)
- Virginia sweetspire (*Itea virginica*)
- weigelia (*Weigelia florida*)

INVASIVE SHRUBS AND VINES THAT SHOULD NEVER BE PLANTED

The following species have proven themselves to be invasive, sometimes highly invasive. They should never be planted in or near natural areas, parklands, or other non-landscaped rural or semi-urban sites. Because birds carry their seeds long distances, we also caution against planting these species in urban areas.

- autumn olive (*Elaeagnus umbellata*)
- barberry (*Berberis thunbergii*)
- buckthorn, exotic (*Rhamnus* spp.)
- burning bush (*Euonymus alatus*)
- European highbush
cranberry/guelder rose (*Viburnum opulus*)
- honeysuckle (non-native; *Lonicera* species including *japonica*, *tatarica*, *mackii*, etc.)
- Japanese knotweed (*Polygonum cuspidatum*)
- multiflora rose (*Rosa multiflora*)
- oriental bittersweet (*Celastrus orbiculata*)
- periwinkle (*Vinca minor*)
- privet species (*Ligustrum* spp.)

FORBS AND DECORATIVE GRASSES

Wherever possible, we encourage gardening with native Iowa grasses and forbs. Prairie and savanna species grow well in Iowa, produce beautiful gardens, and are widely available. Many Iowa nurseries now specialize in native seeds and plants. A listing of such nurseries is available through Johnson County Soil and Water Conservation District (www.jcswcd.org). "Prairie mixes" available through large commercial chains often contain non-native and invasive species; always avoid these mixes.

The following species have proven to be highly invasive and pose serious threats to native communities. **These should never be planted:**

- birdsfoot trefoil (*Lotus corniculatus*)
- crown vetch (*Coronilla varia*)
- dame's rocket (*Hesperis matronalis*)
- eulalia, Chinese or Japanese
silvergrass, maiden grass
(*Miscanthus sinensis*)
- eulalia grass, also known as pampas
and plume grass (*Miscanthus
sacchariflorus*)
- leafy spurge (*Euphorbia esula*)
- purple loosestrife (*Lythrum
salicaria*)
- reed canary grass (*Phalaris
arundinacea*)
- sericea lespedeza (*Lespedeza
cuneata*)
- spotted knapweed (*Centaurea
maculosa*)
- teasel (*Dipsacus fullonum*, *D.
sylvestris*)
- yellow and white sweet clover
(*Melilotus officinalis*, *M. alba*)

This listing was compiled in January, 2007, for Johnson County Heritage Trust by professionals who routinely work with native plants and natural communities in Johnson County:

Dick Baker, Emeritus Professor of Geoscience, The University of Iowa
Mary Sue Bowers, Natural Resource Manager, U.S. Army Corps of Engineers, Coralville Lake
Chris Henze, Johnson County Roadside Vegetation Manager
Diana Horton, Professor of Biology, The University of Iowa
Casey Kohrt, Research Geologist, Iowa Geological Survey
James Martin, Clear Creek Watershed Coordinator, Johnson County Soil & Water Conservation District
Connie Mutel, nature and science writer, The University of Iowa
Judy Nauseef, APLD, ICNP, Judy Nauseef Landscape Design
Mark Vitosh, District Forester, Iowa Department of Natural Resources

Appendix C: Salt Tolerant Listings (Onandago County)

<i>Botanical Name</i>	<i>Common Name</i>	<i>Salt Tolerant</i>	<i>Hardiness</i>	<i>Height</i>	<i>Deer Resistance</i>	<i>Snow-pile Tolerant</i>	<i>Native Status</i>
Shrubs							
<i>Arctostaphylos uva-ursi</i>	Bearberry	yes	3a	12"	A	yes	Eastern North
<i>Comptonia peregrina</i>	Sweetfern	yes	3a	24-48"	unknown	no	Northeastern US
<i>Diervilla sessilifolia</i>	Dwarf Bush	yes	4a	36-60"	unknown	no	Southeastern US
<i>Hypericum kalmianum</i> 'Ames'	Ames Kalm St.	yes	4b	24"	good	no	Northeastern US
<i>Juniperus horizontalis</i> 'Blue Chip', 'Bar Harbor', 'Wiltonii'	Creeping Juniper	yes	3a	12"	A, B	yes	North America
<i>Juniperus sabina</i> 'Broadmoor'	Savin Juniper	yes	3b	12-36"	B	yes	Europe, Asia, Siberia
<i>Paxistima canbyi</i>	Canby Paxistima	unknown	4a	12"	unknown	yes	Virginia, West
<i>Potentilla fruticosa</i> 'Longacre'	Cinquefoil	yes	3a	36"	A	no	Northern
<i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Sumac	yes	3a	24-36"	A	no	Northeastern US
<i>Rosa rugosa</i> 'Alboplena', 'Belle Poitevine', 'Frau Dagmar Hastrup'	Rugosa Rose	yes	3a	36-48"	C	no	Asia
Perennials							
<i>Achillea millefolium</i>	Yarrow	yes	3	24"	B	yes	North America
<i>Adiantum pedatum</i>	Maidenhair Fern	unknown	3	12-24"	good	yes	Northeastern US
<i>Aster divaricatus</i> (<i>Eurybia divaricata</i>)	Woodland Aster	unknown	3	18-24"	B	yes	Northeastern US
<i>Chasmanthium latifolium</i>	Northern Sea Oats	yes	5	36"	A	yes	Northeastern US
<i>Hemerocallis citrina, fulva</i>	Daylily	yes	3	24-30"	C	yes	Asia
<i>Heuchera micrantha, villosa, sanguinea</i>	Coral Bells	yes	2	12-18"	B	yes	North America
<i>Hosta sp.</i>	Plantain Lily	yes	3	12-36"	D	yes	Asia
<i>Tiarella cordifolia</i>	Heartleaf Foamflower	unknown	4	12-18"	B	yes	Northeastern US
<i>Tradescantia ohiensis</i>	Ohio Spiderwort	unknown	5	24-36"	B	yes	Northeastern US
<i>Waldsteinia fragaroides</i>	Barren Strawberry	yes	4	4-6"	unknown	yes	Eastern US
Seed Mixes							
Low-growing Wildflower/Grass Seed Mix	Ernst Conservation Seeds			up to 36"	yes	yes	Ernst Conservation Seeds
Northeastern US Roadside Native Mix	Ernst Conservation Seeds			up to 72"	yes	yes	Ernst Conservation Seeds

Appendix D: City of Iowa City Example Plantings

Figure 2: Sunny planting bed with sedum, coneflower. Pale purple coneflower is thriving better than purple coneflower.



South of old Post Office (Linn Street) Ferns, daylilies, peonies, coral bells, native sedges

10' by 10' planters near Englert Theatre

Pedestrian Mall

At west border along Artisans' Gallery, Switch grass is the only perennial

Annuals: Cannas, caladium, Diamond Frost (needs sun), Bunny tails annual grass

Perennials include white blooming salvia

Shadier areas: Astilbe, fern, hosta

Near Sheraton: Amsonia blue star, hyacinth vine

Pet issues

Staffing on annuals: take 1 week of 2.5 FTE to plant them
Regular summer staffing is 2 Temps @ 24 hours and 1 FTE

Figure 3: Close plantings will grow in; do not need mulch (Burlington St., near Sheraton)



Appendix E: City of Iowa City plantings list

Contact City of Iowa City horticulturalist for current list. (This list was current as of January 2017.) Some plants on this list may not work well in certain applications, and plants not found on the list may be ideal in some instances. Perennials should be planted closer together than label instructs to assist with weed suppression.

TREES

STREET/PARK TREE	Latin name	Common Name
PARK	<i>Sambucus canadensis</i>	American Black Elderberry
PARK	<i>Hamamelis vernalis</i>	Vernal Witchhazel
PARK	<i>Staphylea trifolia</i>	American Bladdernut
PARK	<i>Magnolia stellata</i>	Star Magnolia
PARK	<i>Ptelea trifoliata</i>	Hoptree
PARK	<i>Heptacodium miconioides</i>	Seven-son-flower
PARK	<i>Asimina triloba</i>	PawPaw
PARK	<i>Amelanchier canadensis</i>	Service Berry
PARK	<i>Cornus alternifolia</i>	Pagoda Dogwood
PARK	<i>Hamamelis virginiana</i>	Common Witchhazel
PARK	<i>Cornus kousa</i>	Kousa Dogwood
PARK	<i>Magnolia X soulangeana</i>	Saucer Magnolia
PARK	<i>Parrotia persica</i>	Persian Ironwood
PARK	<i>Oxydendrum arboreum</i>	Sourwood
PARK	<i>Crataegus spp.</i>	Hawthorn Species
PARK	<i>Diospyros virginiana</i>	American Persimmon
PARK	<i>Quercus muehlenbergii</i>	Chinkapin Oak
PARK	<i>Castanea mollissima</i>	Chinese Chestnut
PARK	<i>Alnus glutinosa</i>	Black Alder
PARK	<i>Carya illinoensis</i>	Hardy Pecan
PARK	<i>Picea omorika</i>	Serbian Spruce
PARK	<i>Abies concolor</i>	Concolor Fir
PARK	<i>Tsuga canadensis</i>	Canadian Hemlock
PARK	<i>Quercus bicolor</i>	Swamp White Oak
PARK	<i>Taxodium distichum</i>	Bald Cypress
PARK	<i>Fagus grandifolia</i>	American Beech
PARK	<i>Pinus heldreichii</i>	Bosnian Pine
PARK	<i>Carya cordiformis</i>	Bitternut Hickory
PARK	<i>Prunus serotina</i>	Black Cherry
PARK	<i>Populus deltoides</i>	Eastern Cottonwood
PARK	<i>Magnolia acuminata</i>	Cucumber Magnolia
PARK	<i>Pinus strobus</i>	Eastern White Pine
PARK	<i>Larix decidua</i>	European Larch
PARK	<i>Quercus palustris</i>	Pin Oak
PARK	<i>Carya ovata</i>	Shagbark Hickory
PARK	<i>Carya tomentosa</i>	Mockernut Hickory
PARK	<i>Quercus macrocarpa</i>	Bur Oak
PARK	<i>Platanus occidentalis</i>	American Sycamore
STREET	<i>Syringa reticulata</i>	Japanese Tree Lilac
STREET	<i>Carpinus caroliniana</i>	American Hornbeam
STREET	<i>Maackia amurensis</i>	Amur Maackia
STREET	<i>Cotinus obovatus</i>	American Smoketree
STREET	<i>Cercis canadensis</i>	Eastern Redbud
STREET	<i>Aesculus glabra</i>	Ohio Buckeye
STREET	<i>Ostrya virginiana</i>	American Hophornbeam

STREET	<i>Zelkova serrata</i>	Zelkova
STREET	<i>Ulmus spp. Hybrid</i>	Elm Hybrid
STREET	<i>Koelreuteria paniculata</i>	Golden Raintree
STREET	<i>Nyssa sylvatica</i>	Black Tupelo
STREET	<i>Cladrastis kentukea</i>	Yellowwood
STREET	<i>Sassafras albidum</i>	Sassafras
STREET	<i>Maclura pomifera 'white shield'</i>	White Shield Osage Orange
STREET	<i>Glidetsia tricanthos 'Skyline'</i>	Skyline Honey Locust
STREET	<i>Corylus colurna</i>	Turkish Filbert
STREET	<i>Robinia pseudoacacia 'Chicago Blues'</i>	Chicago Blues Black Locust
STREET	<i>Celtis occidentalis</i>	Common Hackberry
STREET	<i>Eucommia ulmoides</i>	Rubber Tree
STREET	<i>Catalpa speciosa</i>	Catalpa
STREET	<i>Carpinus betulus</i>	European Hornbeam
STREET	<i>Cercidiphyllum japonicum</i>	Katsura Tree
STREET	<i>Stewartia pseudocamellia</i>	Japanese Stewartia
STREET	<i>Fagus sylvatica</i>	European Beech
STREET	<i>Quercus imbricaria</i>	Shingle Oak
STREET	<i>Quercus velutina</i>	Black Oak
STREET	<i>Sophora japonica</i>	Japanese Pagoda Tree
STREET	<i>Aesculus hippocastanum</i>	Horse-Chestnut
STREET	<i>Quercus alba</i>	White Oak
STREET	<i>Ginkgo biloba (male)</i>	Ginkgo
STREET	<i>Gymnocladus dioica</i>	Kentucky Coffeetree
STREET	<i>Liquidambar styraciflua</i>	American Sweetgum
STREET	<i>Quercus rubra</i>	Red Oak
STREET	<i>Tilia americana</i>	American Basswood
STREET	<i>Metasequoia glyptostroboides</i>	Dawn Redwood
STREET	<i>Platanus × acerifolia</i>	London Planetree
STREET	<i>Liriodendron tulipifera</i>	Tulip Poplar
	MAPLES CURRENTLY ON MORATORIUM	
Columnar		Dakota Pinnacle Birch
Columnar		Slender Silhouette Sweetgum
Columnar		Jack Pear 'Jackzam'
Columnar		Japanese Tree Lilac 'Ivory Pillar'
Columnar		Prairie Sentinel Hackberry
Columnar		Princeton Sentry Ginkgo
Columnar		Musashino Columnar Zelkova
Columnar		Crimson Spire Oak
Columnar		Streetspire Oak
Columnar		Fastigate Beech
Columnar		City Sprite Zelkova
Columnar		Native Flame American Hornbeam
Columnar		Tulip Popular 'Fastigiatum'
Columnar		Emerald Sunshine Elm
Columnar		Emerald Avenue Hornbeam
Columnar		Frontier Elm

SHRUBS

Latin name	Common Name
<i>Juniperus horizontalis</i>	Creeping Juniper
<i>Hypericum kalmianum</i>	St. John's wort
<i>Fothergilla gardenii</i>	Dwarf fothergilla
<i>Amorpha canescens</i>	Lead plant
<i>Symphoricarpos orbiculatus</i>	Coralberry
<i>Ceanothus americanus</i>	New Jersey tea
<i>Taxus canadensis</i>	Canadian Yew
<i>Aronia melanocarpa</i>	Black Chokeberry
<i>Symphoricarpos albus</i>	Common Snowberry
<i>Cotoneaster apiculatus</i>	Cranberry Cotoneaster
<i>Juniperus sabina</i>	Spreading Juniper
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum
<i>Viburnum carlesii</i>	Koreanspice Viburnum
<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea
<i>Syringa meyeri</i>	Korean lilac
<i>Cotoneaster divaricatus</i>	Spreading Cotoneaster
<i>Physocarpus opulifolius</i>	Common Ninebark
<i>Myrica pennsylvanica</i>	Bayberry
<i>Viburnum dentatum</i>	Arrowwood Viburnum
<i>Ilex glabra</i>	Inkberry
<i>Weigela florida</i>	Weigela
<i>Chaenomeles speciosa</i>	Flowering quince
<i>Cornus amomum</i>	Silky dogwood
<i>Ilex verticillata</i>	Common winterberry
<i>Calycanthus floridus</i>	Carolina allspice
<i>Kolkwitzia amabilis</i>	Beauty bush
<i>Lindera benzoin</i>	Northern spicebush
<i>Cornus sericea</i>	Redosier Dogwood
<i>Viburnum trilobum</i>	American Cranberrybush Viburnum
<i>Viburnum opulus</i>	European Cranberrybush Viburnum
<i>Aesculus parviflora</i>	Bottlebrush buckeye
<i>Cotinus coggygria</i>	Smoke Bush
<i>Cornus racemosa</i>	Gray Dogwood
<i>Viburnum lantana</i>	Wayfaringtree Viburnum
<i>Viburnum prunifolium</i>	Blackhaw Viburnum
<i>Viburnum lentago</i>	Nannyberry Viburnum
<i>Corylus Americana</i>	American hazelnut
<i>Cornus mas</i>	Corneliancherry Dogwood

PERENNIALS

<i>Achillea</i> spp.	Yarrow
<i>Agastache</i> spp.	Giant hyssop
<i>Allium angulosum</i> 'Summer Beauty'	Ornamental onion
<i>Allium autopurpureum</i>	Ornamental onion
<i>Allium caeruleum</i>	Ornamental onion
<i>Allium flavum</i>	Ornamental onion
<i>Amsonia</i> 'Blue Ice'	Bluestar
<i>Amsonia hubrichtii</i>	Bluestar
<i>Amsonia tabernaemontana</i> var. <i>salicifolia</i>	Willow-leaved bluestar
<i>Andropogon gerardii</i>	Big bluestem
<i>Anthericum ramosum</i>	St. Bernard's lily
<i>Asarum canadense</i>	Wild ginger
<i>Asclepias tuberosa</i>	Buttefly weed
<i>Astilbe</i> spp.	False spirea
<i>Baptisia</i> spp.	False indigo
<i>Calamagrostis x acutiflora</i> 'Karl Foerster'	Karl Foerster grass
<i>Calamintha nepeta</i>	Catmint
<i>Carex brevior</i>	Sedge
<i>Carex bromodies</i>	Sedge
<i>Carex flacca</i>	Blue Sedge
<i>Carex montana</i>	Sedge
<i>Carex pensylvanica</i>	Sedge
<i>Carex shortania</i>	Short's Sedge
<i>Carex sprengeii</i>	Sprengel's sedge
<i>Carex swanii</i>	Swans sedge
<i>Chionodaxa forbesii</i>	Glory of the snow
<i>Coreopsis palmata</i>	Prairie coreopsis
<i>Coreopsis verticulata</i>	Tickseed
<i>Dalea purpurea</i>	Prairie clover
<i>Dryopteris marginalis</i>	Leatherwood fern
<i>Echinacea pallida</i>	Pale purple coneflower
<i>Epimedium x versicolor</i> 'Sulphureum'	Barrenwort
<i>Eryngium yuccifolium</i>	Rattlesnake master
<i>Eupatorium dubium</i>	Joe pye weed
<i>Euphorbia polychroma</i> 'Bonfire'	Spurge
<i>Eurybia divaricata</i>	Eastern wood aster
<i>Geranium 'Orion'</i>	Cranesbill geranium
<i>Geranium sanguineum</i> 'Max Frei'	Bloody cranesbill
<i>Gillenia trifoliata</i>	Bowman's root
<i>Hosta</i> Spp.	Hosta
<i>Liatris pycnostachya</i>	Prairie blazing star
<i>Limonium latifolium</i>	Statice
<i>Maianthemum racemosa</i>	False Solomon's seal
<i>Molinia caerulea</i>	Moor Grass
<i>Monarda bradburiana</i>	Bee Balm
<i>Narcissus</i> Spp.	Daffodil

Nepeta 'Early Bird'
Nepeta 'Walker's Low'
Panicum virgatum
Parthenium integrifolium
Penstemon digitalis
Perovskia atriplicifolia 'Little Spire'
Phlox paniculata
Polystichum acrostichoides
Rudbeckia fulgida
Salvia nemorosa
Schizachrium scoparium
Sesleria autumnalis
Sesleria caerulea
Solidago spp.
Sorghastrum nutans
Spodiopogon sibiricus
Sporobolus heterolepis
Stachys officinalis
Thalictrum dioicum
Veronica lettermannii

Catmint
Catmint
Switch grass
Wild quinine
Foxglove beard tongue
Russian sage
Garden phlox
Christmas fern
Sweet black-eyed susan
Meadow sage
Little bluestem
Autumn moor grass
Spring moor grass
Goldenrod
Indiangrass
Graybeard grass
Prairie dropseed
Betony
Early meadow rue
Ironweed

Appendix F: City of Iowa City Vegetation Control Chemicals on City Property

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I. Purpose

The purpose of this policy is to minimize the use of vegetation control chemicals on public land that inhibits the intended use of a public space.

II. Policy

Use of vegetation control chemicals shall be minimized through:

1. Landscape designs, plant material, and maintenance practices that minimize the growth of undesirable vegetation.
2. Use of mechanical or other non-chemical means for controlling and removing undesirable vegetation.

Use of vegetation control chemicals to manage undesirable vegetation is permitted in limited circumstances as outlined below:

1. When undesirable vegetation growth creates safety hazards to the public (Example: growth creates unsafe pathways or blocks views needed to provide security)
2. To prevent the growth of vegetation that compromises flood control structures
3. To prevent the growth of noxious or poisonous vegetation
4. To limit work along high traffic medians, guard rails, bridges on high traffic roadways and other areas of the right-of-way which exposes employees to unsafe work conditions.
5. When mechanical removing undesirable vegetation exposes personnel to poisonous plants.
6. To control noxious or invasive species following best practice natural area management plans.
7. To maintain usability of special athletic use areas (Example: bocce ball court surface)
8. On public lands leased for agriculture purposes

III. Procedures

When it is deemed necessary to perform a chemical application, the following procedures will apply:

1. All non-chemical means of controlling the undesirable vegetation must be considered first.
2. All applications will be performed by personnel that are properly trained on chemical application, storage and disposal techniques.
3. The public will be notified of chemical applications completed in public areas according to chemical labels and State regulations.
4. All chemical applications will be completed in accordance with the chemical labels and State regulations.

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5. Public use spaces that require chemical applications may need to be temporarily closed in order to ensure that the public does not come in contact with chemicals. Discretion on temporary closures is granted to Department Heads or designees.
6. Records will be kept of all chemical applications including location, date, time, type of chemical used, amount of chemical used and reason that chemical treatment was used.
7. All records will be reported to the appropriate personnel for inclusion in the City's annual Storm Sewer report in accordance with NPDES permit 52-25-0-05 issued by the State, Part II.F.2 and Part III.

IV. Responsibility

All City employees shall comply with this regulation. It is the responsibility of individual Department Heads or designees to ensure compliance.

V. Regulation Update

The Parks and Recreation Director shall review this policy no less frequently than once every three years and forward any recommended changes to the City Manager.

Approved:



Geoff Fruin, City Manager