

# Bloomington Parks and Recreation Integrated Pest Management (IPM) Plan

Approved by the Board of Park Commissioners  
December 16, 2017

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## **I. Integrated Pest Management (IPM) Plan Mission Statement**

It is the mission of the City of Bloomington Parks and Recreation Department's IPM Plan to sustain the beauty, recreation potential, and ecological diversity of the City's parks and recreation assets in a safe and responsible manner. This plan will take into account the health and safety of the public and Department staff, and the impact to the environment in an effort to minimize the use of pesticides in City parks.

## **II. IPM Goals**

- Minimize the use of pesticides by adhering to common sense principles of IPM, to the point of no pesticide use whenever possible and practical.
- Minimize the risk to human health and the environment by encouraging the use of non-chemical controls as alternatives. When chemical treatments are deemed necessary, such treatments will be used carefully to reduce non-target adverse effects on public, staff, and natural resources.
- Maintain landscaped areas reasonably free of weeds to preserve the function and aesthetic appearance of public areas and City facilities.
- Provide healthy, high-quality and sustainable facilities, parks, and public spaces that support native biodiversity.
- Provide a model of responsible environmental stewardship for the community.
- Conduct ongoing staff training to address risk and safety factors (e.g. use of protective equipment, product labels, and weather conditions), innovative pest control methods, and other pest management practices. Training will include education about the flora and fauna that are targets for preservation and eradication.
- Establish consistent, comprehensive, and transparent documentation of pest activities and control actions throughout the Parks and Recreation Department. Collected data will be used to determine the effectiveness of control methods.
- Identify staff positions authorized to use pesticides via an up-to-date list of licensed pesticide applicators.
- Create a consistent public notification procedure to inform and educate the public about when, where, and what type of pesticides are applied.

## **III. Description and Scope of IPM**

IPM is a decision-making process which selects, integrates, and implements pest control strategies to prevent or control pest populations. IPM relies on the use of site-specific information about environmental conditions, visitor use, and pest biology and behavior to prevent or control pests that interfere with the purpose and use of a particular site. In choosing control strategies, impacts to human health, the environment, and non-target organisms are considered.

This IPM Plan applies to all pest control activities and pesticide use in buildings and facilities grounds and open spaces, ballfields, the golf course, and other property owned or managed by

the City of Bloomington Parks and Recreation Department. All employees and contractors hired by the City are required to adhere to this plan.

#### **IV. Program Components**

- **Threshold levels**

An acceptable threshold level of treatment for each target pest and site will be established to determine if treatment is warranted. Each Division (Operations, Sports, Recreation Services) will establish threshold levels for common pests on each property they manage. In some instances, treatment may be required by federal or state law. The assessment will be based on the following:

1. The tolerable levels of environmental, aesthetic and/or economic impacts as a result of the pest population(s) and the tolerable level of risk to human health as a result of the pest population(s);

OR

2. The size or density of the pest population that must be present to cause unacceptable environmental, aesthetic and/or economic impacts; and the size, density and type of pest population that must be present to create a human health risk.

Action thresholds will be guided by the official invasive species list of the Indiana Invasive Species Council (IISC) and accumulated knowledge and experience in treating pests on each property. The ranking system used in the IISC lists will direct management efforts, with a focus on high-priority invasive species specific to the City of Bloomington.

Areas that experience a high volume of visitors will remain primarily pesticide-free. Preventative, best management practices will be used to maintain property function and visitor safety. Exemptions may be granted, if necessary, for pests that threaten visitor safety and hinder the function of the area, such as stinging insects. The presence of stinging insects in particular presents a low threshold for pesticide treatment due to their impact on visitor safety. All exemptions for treatments will go through the approval process outlined below.

Established pesticide-free areas include, but are not limited to:

1. Playgrounds – No pesticides will be applied inside or within 25 feet of the boundary of playgrounds.
2. Dog Parks – No pesticides will be applied inside or within 25 feet of the outside perimeter of dog parks.
3. Shelters – No pesticides will be applied inside or within 25 feet of shelter facilities.
4. Swimming/Wading Pools – No pesticides will be applied inside or within 25 feet of an outdoor pool during the season it is open to the public.

- **Criteria for Selection and Use of Pesticides**

The Parks and Recreation Department shall maintain landscaped areas reasonably free of pests and weeds to preserve the function and aesthetic appearance of public areas. Eliminating all weeds and pests from parks is not a goal of this plan.

Pesticides shall be used only after other non-pesticide means of control have been attempted or have been determined to be ineffective or cost prohibitive. Preventative practices will play a significant role in controlling pests prior to the use of pesticides, including best management practices such as planting native competitors to invasive species, and adjusting the mowing schedule to discourage invasive growth. Application of pesticides shall comply with the provisions of this plan as well as state and federal law.

The selection and use criteria for pesticides shall conform to standard IPM principles. Upon determining that any treatment is necessary, the Department will use the following criteria to help select the appropriate IPM treatment strategy:

- a) Least-disruptive of natural controls
- b) Least-hazardous to human health
- c) Least-toxic to non-target organisms
- d) Least-damaging to the environment
- e) Most likely to produce a permanent reduction in the site's ability to support target pests
- f) Cost-effectiveness

The products currently in use that are not in toxicity category I or II (signal word Danger or Caution) as determined by the EPA will constitute the Approved Use List, and newly approved chemicals will be guided by the EPA safer choice standard. All chemicals on the list will be subject to the annual review process outlined in Section V. A full list of approved chemicals can be found in the appendix.

- **Exemption Process**

Exemptions to the Approved Use List will take into consideration public input through the Environmental Resources Advisory Council (ERAC) and advice from the Purdue Extension. Park Board meetings and ERAC meetings will serve as opportunities for public input into the IPM plan. All exemptions must be approved by both the Parks Director and the Risk Manager.

To obtain an exemption, the applicator shall submit a written request to the Director and Risk Manager for approval. The Director and Risk Manager shall approve such requests only if the applicator has documented in writing a compelling need to use the pesticide, a good faith effort to find alternatives to the particular pesticide, and that effective alternatives to the particular pesticide do not exist for the proposed use.

The applicator needs to document that non-toxic methods of pest control, such as cultural controls, physical/mechanical controls, and biological controls have been shown to be

ineffective and monitoring has indicated that the pest will cause unacceptable health or safety hazards, or an unacceptable negative impact on the property.

Exemptions shall be granted on a case by case basis and shall apply to a specific pest problem, with the selection and application of such pesticides conforming to the spirit and intent of this policy. The use of toxicity category I or II chemicals will require an exemption from the IPM Plan.

All applications of exempted treatments will be documented through the same standards as treatments used from the Approved List. Exemptions will be reviewed annually in conjunction with the annual review of the IPM plan.

- **Emergency Response**

Exceptions to the exemption process outlined above will be allowed in the event of an emergency if a rapid response to a pest problem is required and no treatment options are on the Approved List. Treatments can be exempted by either the Risk Manager or the Parks Director without the standard written process.

- **Notification of Pesticide Applications**

The Parks and Recreation Department will notify citizens and employees of all pesticide applications conducted on City Parks Properties. All locations that are treated will be subject to the notification procedures outlined in this plan.

Park properties will include designated notification areas at the closest entry point(s) to the treatment area. Prominent signs will be posted before spraying occurs, and will remain for at least 48 hours after application. Individual treatment areas will be flagged as treatment occurs and will remain in place a minimum of 48 hours after treatment.

Signs shall contain the name and active ingredient of the pesticide products, the target pest, the date of pesticide use, the signal word indicating the toxicity category of the pesticide product, and the date for re-entry, if any is required, to the area treated. Signs will also describe what is being done as part of the treatment, the goal of the treatment, and why the treatment is warranted. Signs shall be of a standardized design that are easily recognizable to the public and workers.

An up-to-date list of all pesticide treatments conducted in park properties will be available on the Department website.

- **Record Keeping of Pesticide Applications**

Each division shall keep accurate records of all treatments used and the results. Information on all treatments (including non-chemical ones) shall include how, when, where and why the treatment was applied and the name of the applicator. Chemical

applicators will record: site of application, date of application, target pest, name of the product and active ingredient of the pesticide(s) applied, amount of product applied, and the pesticide signal word. In addition, IPM records shall include a list of all exemptions granted, as well as the written justifications developed for the consideration of those exemptions.

This information will be entered into a database for departmental use, available to the public upon request, and application information will serve as the basis for the Annual IPM review. The internal IPM working group will review pest management treatments to evaluate the successes and failures of the IPM program, and to plan more efficient and effective pest management strategies. The Parks Department shall make this information available to the public in a prompt and efficient manner.

- **Storage**

All liquids will be kept in secondary containment and all chemicals will be kept in a climate controlled facility. Keys to storage will only be available only to licensed applicators. Pesticide storage will comply with the label, as required by law.

## **V. Property Management Information**

The Parks Department will develop site-specific building and landscape maintenance plans for all sites, which will incorporate pest prevention and control measures. These plans will specify site assessment, testing and the timing and/or type of maintenance practices; monitor conditions and pest populations; establish pest thresholds; recommend educating users or modifying user behavior; define record-keeping requirements and evaluation criteria; solve problems using expert assistance and resources; and, if necessary, identify the conditions for use of pesticides. The property management plans will detail the preventative practices implemented in the maintenance of each area. Plans will be reviewed by the same procedure outlined for the review of the IPM plan.

## **VI. IPM Plan Review and Public Input**

The Integrated Pest Management plan will be reviewed on an annual basis by the IPM working group, including the approved use pesticide list. The group will look for safer alternatives to chemicals annually, and any modifications to the plan or list will incorporate feedback from the IPM working group, the Environmental Resources Advisory Council (ERAC) and the Parks Board. The public will have opportunities to give input through regularly held ERAC and Parks Board meetings. The IPM working group will also seek advice from experts at the Purdue Extension Office when revising the plan.

## **VII. Staff Training**

IPM training will be done on an annual basis and include all full and part-time employees with pest control duties. Trainings will include:

- Principles of an Integrated Pest Management Program, including the establishment of thresholds.
- Alternative strategic control options
- Monitoring protocols for different pest problems, including record keeping
- General introduction to identification of plant diseases and common pest problems
- Procedures for developing site-specific IPM implementation plans
- Risks and proper use of pesticides
- Safety measures and emergency response
- Preparation of chemicals and application techniques, according to the labels

### **Acknowledgements**

The Parks Department would like to acknowledge the influence of several cities' pest management plans on the creation of this IPM plan. These cities include: Boulder, CO, Lawrence, KS, Newton, MA, Madison, WI, Newport, OR, Portland, OR, San Rafael, CA, and Santa Cruz, CA.

## **VIII. Appendix**

### **Appendix A**

#### **Parks Department Licensed Applicator Position List**

1. City Landscaper
2. Natural Resources Laborer
3. Urban Forester
4. Golf Course Superintendent
5. Sports Working Foreman
6. Sports Laborer I

### **Appendix B**

#### **Definitions**

1. *Integrated Pest Management (IPM)*: a decision making process which selects, integrates, and implements pest control strategies to prevent or control pest populations. IPM relies on the use of site-specific information about environmental conditions and the dynamics of human characteristics and activities, as well as pest biology and behavior to prevent or control pests that interfere with the purpose and use of a particular site. In choosing control strategies, minimal impacts to human health, the environment, and non-target organisms are considered.
2. *Biological Controls*: Parasites, pathogens, and predators that assist in managing pest populations and reducing their damage.
3. *Cultural Controls* - practices that can reduce pests by making the environment less favorable, such as improved sanitation or horticultural practices.



4. *Mechanical/Physical Controls*: direct measures that either kill the pest, make the environment unsuitable for their entry, dispersal, or survival, or physically keep pests from places where they're not wanted.
5. *Pesticide*: any substance or mixture of substances intended for destroying or repelling any pest. This includes without limitation fungicides, insecticides, nematocides, herbicides, and rodenticides and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.
6. *Pest*: any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism (except viruses, bacteria, or other micro-organisms on or in living man or other living animals) that imposes an economic, social, or environmental cost.
7. *Reasonable Alternative*: a feasible option for pest control which takes into account the economic, social, and environmental costs and benefits of the proposed choices.
8. *Toxicity Categories I-IV Pesticide Products*: any pesticide products that meet United States Environmental Protection Agency criteria for Toxicity Category I-IV under Section 156.10 of Part 156 of Title 40 of the Code of Federal Regulations. Each category has a signal word associated with it on the label. Category I is Danger, Category II is Warning, Category III is Caution, and Category IV had no signal word requirement, but may use the standard for Category III if desired.
9. *Prevention through hygiene*: a technique to prevent the spread of invasive species by adhering to standards of cleanliness and cleanup of persons and equipment in the workplace.
10. *Threshold level*: The point at which the size or effect of the pest population is no longer acceptable and warrants management under the protocol set forth in the IPM plan.
11. *Invasive species*: a species that is not native to the local ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
12. *Biodiversity*: the variety of life in the world or in a particular habitat or ecosystem.

## **Appendix C**

### **Department Pesticide Use Policy**

#### **POLICY RE: Pesticide Use Policy**

##### **Vision**

The City of Bloomington Parks and Recreation Department is committed to continuously improve environmental management practices and to become a world-class model of environmental performance and stewardship.

##### **Mission**

It is the mission of the City of Bloomington Parks and Recreation Department to sustain the beauty, recreation potential, and ecological diversity of the City's parks and recreation assets in a safe and

responsible manner. The creation of a pesticide use policy will take into account the health and safety of the public and Department staff, and the impact to the environment in an effort to minimize the use of pesticide products in City parks.

### **Position Statement**

The Bloomington Parks and Recreation Department is committed to the ongoing development and implementation of sustainable vegetation management practices. Pests that are harmful to the health, function, or aesthetic value of City assets will be managed utilizing the least toxic and most effective methods available. The Department's pesticide use policy will reflect these goals while focusing on the health and safety of the public and Department staff, protection of the environment and the overall minimization of pesticide usage.

### **Overarching Management Strategies**

The Department will employ the following vegetation management strategies where applicable to the asset being managed and where feasible:

- Improve soil health (healthy soil = healthy plants = lowered pest pressure)
- Monitor and prevent weed expansion (remove before plant can disperse seed)
- Remove invasive plants (prevent spread of undesirable species)
- Install native plants (increased plant resilience and lower irrigation needs)
- Prioritize landscaped areas/styles (lessen the need for vegetation control)
- Minimize use of pesticides and fertilizers (less vegetation = lower maintenance)
- Mechanical weed control (i.e. hand pulling, propane torches, etc.)
- Other strategies as they evolve (continuing research on Best Practices and staff education)

This policy will guide the development of the Department's Integrated Pest Management Plan.

December 15, 2015

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## Appendix D

### Pesticide Information (By Parks and Recreation Department Divisions)

- Pesticide Product List

Product	Active Ingredient(s)	Type	EPA Toxicity	Frequency	Application	Quantity On Hand
<b><i>Golf Course</i></b>						
Acelepryn- <b>Syngenta</b>	Chlorantraniliprole 18.4%	Insecticide	IV	As needed	early in the season for grubs	
Dylox 6.2 - <b>Bayer</b>	Trichlorfon, Dimethyl Phosphonate 6.2%	Granular Insecticide	IV	As needed	worm infestation greens	250lbs
Bueno 6- <b>Drexel</b>	monosodium acid methanearsonate 47.6%	Herbicide	III	very rare use	weeds	3 quarts
<b>Carbaryl 4L</b>	<b>carbaryl 43.4%</b>	<b>Pesticide</b>	<b>III</b>	<b>rare use</b>	<b>yellow jackets</b>	
<b>CLT 720-Armortech</b>	<b>Chlorothalonil 54%</b>	<b>Fungicide</b>	<b>II</b>	<b>as needed</b>	<b>dollar spot on greens/fwys/tees</b>	<b>135 gallons</b>
Conserve	Spinosad 11.6%	Herbicide	IV	as needed	spray on greens	
<b>Curalan-BASF</b>	<b>Vinclozolin 50%</b>	<b>Fungicide</b>	<b>III</b>	<b>rare use</b>	<b>dollar spot on greens</b>	<b>63.25lbs</b>
<b>Dimension 2EW-Dow</b>	<b>Dithyopir 24%</b>	<b>Herbicide</b>	<b>II</b>	<b>spring/fall</b>	<b>crab grass</b>	<b>16 gallons</b>
Dithiopyr Dimension & 10-3-10- <b>Dow</b>	Dithyopir 0.125%	Herbicide	III	as needed	on greens	300lbs
Drive XLR8- <b>BASF</b>	8-Quinolinecarboxylic acid, 3,7-dichloro- 18.92%	Herbicide	III	spring	post emergent weeds	8oz
Insignia- <b>BASF</b>	Pyraclostrobin 20%	Fungicide	III	rare use	dollar spot on greens	0.5lbs
<b>Mefenoxam 2AQ-Quali-pro</b>	<b>Mefenoxam 22.5%</b>	<b>Fungicide</b>	<b>II</b>		<b>extreme heat/greens/pythium</b>	<b>40oz</b>
Merit	Imidicloprid 0.5%	Insecticide	III	as needed	Turfgrass	
Millennium Ultra 2 <b>Nufarm US</b>	2,4-D 27.32%, Clopyralid 2.54%, Dicamba 4.65%	Herbicide	I	spring	post emergent weeds	3 gallons
Oxadiazon& 10-3-10 Fertilizer- <b>Quali Pro</b>	Oxadiazon 34.4%	Herbicide	III	spring/fall if needed	crab grass	(225) - 50lbs bags
Pentathlon DF	Mancozeb 75%	Algicide	III	as needed	greens when they are wet and prone to algae	
Prosege	Halosulfuron 75%	Herbicide	III	as needed	nutsedge	
Prostar 70WG- <b>Bayer</b>	Flutolanil 70%	Fungicide	III	rare use	greens brown patch	18lbs
Razor Pro- <b>Nufarm US</b>	Glyphosate 41%	Herbicide	III	as needed	generic all weeds	2 gallons
<b>Secure-Syngenta</b>	<b>Fluazinam 40%</b>	<b>Fungicide</b>	<b>II</b>	<b>rare use</b>	<b>greens brown patch</b>	<b>2.5 gallons</b>
Speedzone- <b>PBI Gordon</b>	2,4-D 28.57%, MCPP 5.88%, Dicamba 1.71%, Carfentrazone 0.62%,	Herbicide	III	spring	post emergent weeds	5 gallons

Spotrete	Thiran 44%	Fungicide	III	as needed	dollar spot/brown patch, animal repellent	
Talprid	Bromethalin 0.025%	Mole bait	III	as needed	bait for moles	
TM462-Armor Tech	Thiophanate-Methyl 46.2%	Fungicide	III	rare use	greens brown patch	8.5 gallons
Tourney- Valent	Metconazole 50%	Fungicide	III	as needed	dollar spot on greens/fwys/tees	290oz
Trimmit-Syngenta	Paclobutrazol 22.3%	Growth Regulator	III	rare use	on greens to slow non-bent grass	12oz
<b><i>Twin Lakes, Winslow and Olcott Ball fields</i></b>						
15-0-8 Millennium Ultra	2,4-D 0.69%, Clopyralid 0.09%, Dicamba 0.086%	Fertilizer	III		standard turf maintenance	(80)- 50lb bags
13-0-5 with Dimension	Dithiopyr, Pyridinedicarbothioate 0.15%	Fertilizer	III		standard turf maintenance	(80)- 50lb bags
22-0-8 with Grub Control	Imidacloprid 0.2%	Fertilizer	III		standard turf maintenance/grub control	(80)- 50lb bags
Acelepryn- Syngenta	Chlorantraniliprole 18.4%	Insecticide	IV	As needed	early in the season for grubs	
Glystar Pro	Glyphosate 41%	Herbicide	III		fence row treatments	5 gallons
SureGuard	Flumioxazin 51%	Herbicide	III	speciflc week treatment		1lb
ProSedge	halosulfuron-methyl 75%	Herbicide	III	speciflc week treatment		2oz
Glyphosate	Glyphosate 41%	Herbicide	III		fence row treatments	5 gallons
<b>Natural Resources</b>						
				(Griffy, Leonard Springs, Wapahani Park. Total area in these parks exceeds 1,200 acres)		
Clethodim	Clethodim 26.4%	Herbicide	II		used for invasive grass species	.33 gallon
Clopyralid	Clopyralid 40.9%	Herbicide	III		limited use for very difficult invasives	2.5 gallons
Glyphosate	Glyphosate 41%	Herbicide	III		selective invasive specie management	7.5 gallons
Triclopyr	Triclopyr 60.45%	Herbicide	III		limited use for very difficult invasives	2.5 gallons

Operations						
Glyphosate	Glyphosate 41%	Herbicide	III		managing weeds in cracked surfaces and along fence rows in lieu of using gas powered string trimmers.	6 gallons
Urban Forestry						
Glyphosate	Glyphosate 41%	Herbicide	III		managing weeds in tree grates.	2 quarts
Tordon RTU	Picloram 5.4%, 2,4-D, triisopropanolamine 20.9%	Herbicide	III		on cut stumps to prevent re-sprouting of suckers	2 quarts
Tree Age	Emameectin benzoate 4%	Insecticide	II		injected into ash trees to treat for Emerald Ash Borer	? New in 2015

Neonicotinoid	Will not be repurchased
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- The following have been used but as of Jan 2017 use will require an exemption through the process outlined in this plan:

Mefenoxam 2AQ- <b>Quali-pro</b>	Mefenoxam 22.5%	Fungicide	II
Millennium Ultra 2 Nufarm US	2,4-D 27.32%, Clopyralid 2.54%, Dicamba 4.65%	Herbicide	I
CLT 720-Armortech	Chlorothalonil 54%	Fungicide	II
Clethodim	Clethodim 26.4%	Herbicide	II
Tree Age	Emameectin benzoate 4%	Insecticide	II

## Appendix E

- Information on the [Indiana Invasive Species Council](#) can be found online, as well as the [Official IISC invasive species list](#).

- **Indiana Invasive Plant List**

- Approved by Indiana Invasive Species Council 10/11/2013
- For more information, go to <http://www.entm.purdue.edu/iisc/invasiveplants.php>

Common Name	Latin Name	Rank	Common Name	Latin Name	Rank
<b>Aquatic</b>			poison hemlock	<i>Conium maculatum</i>	H
anchored water hyacinth	<i>Eichhornia azurea</i>	H	Queen Anne's lace	<i>Daucus carota</i>	M
arrowhead	<i>Sagittaria sagittifolia</i>	FN	St. John's wort	<i>Hypericum perforatum</i>	L
Asian marshweed	<i>Limnophila sessiliflora</i>	H	spiny plumeless thistle	<i>Carduus acanthoides</i>	H
Brazilian elodea	<i>Egeria densa</i>	H	spreading hedge parsley	<i>Torilis arvensis</i>	C
brittle naiad	<i>Najas minor</i>	H	spotted knapweed	<i>Centaurea stoebe</i>	H
caulerpa	<i>Caulerpa taxifolia</i>	FN	striate lespedeza	<i>Kummerowia striata</i>	M
Chinese waterspinach	<i>Ipomoea aquatic</i>	H	white sweet clover	<i>Mellilotus alba</i>	M
curly-leaved pondweed	<i>Potamogeton crispus</i>	H	wild parsnip	<i>Pastinaca sativa</i>	M
duck lettuce	<i>Ottelia alismoides</i>	H	yellow sweet clover	<i>Melilotus officinalis</i>	M
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	H	<b>Shrub</b>		
European frogbit	<i>Hydrocharis morsus-ranae</i>	H	Amur honeysuckle	<i>Lonicera maacki</i>	H
exotic bur-reed	<i>Sparganium erectum</i>	FN	Amur privet	<i>Ligustrum amurense</i>	C
flowering rush	<i>Butomus umbellatus</i>	H	autumn olive	<i>Elaeagnus umbellata</i>	H
giant salvinia	<i>Salvinia auriculata</i>	FN	Bell's honeysuckle	<i>Lonicera x bella</i>	H
giant salvinia	<i>Salvinia biloba</i>	FN	bicolor lespedeza	<i>Lespedeza bicolor</i>	M
giant salvinia	<i>Salvinia herzogii</i>	FN	blunt leaved privet	<i>Ligustrum obtusifolium</i>	H
giant salvinia	<i>Salvinia molesta</i>	FN	burning bush	<i>Euonymus alatus</i>	M
heartshape	<i>Monochoria vaginalis</i>	FN	California privet	<i>Ligustrum ovalifolium</i>	C
hydrilla	<i>Hydrilla verticillata</i>	H	Chinese privet	<i>Ligustrum sinense</i>	C
miramar weed	<i>Hygrophilia polysperma</i>	H	common barberry	<i>Berberis vulgaris</i>	C
monochoria	<i>Monochoria hastata</i>	FN	common buckthorn	<i>Rhamnus cathartica</i>	H
mosquito fern	<i>Azolla pinnata</i>	FN	common privet	<i>Ligustrum vulgare</i>	C
narrow-leaved cattail	<i>Typha angustifolia</i>	H	glossy buckthorn	<i>Frangula alnus</i>	H
oxygen weed	<i>Lagarosiphon major</i>	FN	highbush cranberry	<i>Viburnum opulus v. opulus</i>	C
parrotfeather	<i>Myriophyllum aquaticum</i>	H	Japanese barberry	<i>Berberis thunbergii</i>	H
purple loosestrife	<i>Lythrum salicaria</i>	H	Japanese meadowsweet	<i>Spiraea japonica</i>	C
water chestnut	<i>Trapa natans</i>	H	jetbead	<i>Rhodotypos scandens</i>	C
yellow floating hearts	<i>Nymphoides peltata</i>	H	Morrow's honeysuckle	<i>Lonicera morrowii</i>	H
yellow iris	<i>Iris pseudacorus</i>	H	multiflora rose	<i>Rosa multiflora</i>	H
<b>Grass</b>			porcelain berry	<i>Ampelopsis brevipedunculata</i>	C
Chinese maiden grass	<i>Miscanthus sinensis</i>	M	Russian olive	<i>Elaeagnus angustifolia</i>	M
common reed	<i>Phragmites australis</i>	H	sericea lespedeza	<i>Lespedeza cuneata</i>	H
giant reed	<i>Arundo donax</i>	C	Tatarian honeysuckle	<i>Lonicera tatarica</i>	H
Japanese stiltgrass	<i>Microstegium vimineum</i>	H	wine raspberry	<i>Rubus phoenicolasius</i>	C
Johnson grass	<i>Sorghum halepense</i>	H	<b>Tree</b>		
lyme grass	<i>Leymus arenarius</i>	C	Amur cork tree	<i>Phellodendron amurense</i>	H
miscanthus hybrid	<i>Miscanthus x gigantea</i>	C	black alder	<i>Alnus glutinosa</i>	H
reed canarygrass	<i>Phalaris arundinacea</i>	H	callery pear	<i>Pyrus calleryana</i>	H
small carpgrass	<i>Arthraxon hispidus</i>	H	Norway maple	<i>Acer platanoides</i>	H
tall fescue	<i>Schedonorus arundinaceus</i>	M	princess tree	<i>Paulownia tomentosa</i>	C
<b>Herbaceous</b>			sawtooth oak	<i>Quercus acutissima</i>	C

bouncing bet	<i>Saponaria officinalis</i>	M	Siberian elm	<i>Ulmus pumila</i>	M
bull thistle	<i>Cirsium vulgare</i>	H	tree of heaven	<i>Ailanthus altissima</i>	H
Canada thistle	<i>Cirsium arvense</i>	H	white mulberry	<i>Morus alba</i>	H
common teasel	<i>Dipsacus fullonum</i>	H	<b>Vine</b>		
crown vetch	<i>Coronilla varia</i>	H	Asian bittersweet	<i>Celastrus orbiculatus</i>	H
cut-leaved teasel	<i>Dipsacus laciniatus</i>	H	black swallow-wort	<i>Cynanchum louiseae</i>	H
dame's rocket	<i>Hesperis matronalis</i>	H	Chinese yam	<i>Dioscorea polystachya</i>	H
garlic mustard	<i>Alliaria petiolata</i>	H	creeping Charlie	<i>Glechoma hederacea</i>	M
giant hogweed	<i>Heracleum mantegazzianum</i>	M	English ivy	<i>Hedera helix</i>	M
goatsrue	<i>Galega officinalis</i>	M	field bindweed	<i>Convolvulus arvensis</i>	H
hybrid cattail	<i>Typha x glauca</i>	C	Japanese honeysuckle	<i>Lonicera japonica</i>	H
Japanese chaff flower	<i>Achyranthes japonica</i>	H	Japanese hops	<i>Humulus japonicus</i>	H
Japanese hedge parsley	<i>Torilis japonica</i>	C	kudzu	<i>Pueraria montana</i>	H
Japanese knotweed	<i>Fallopia japonica</i>	H	large-leaved periwinkle	<i>Vinca major</i>	C
Korean lespedeza	<i>Kummerowia stipulacea</i>	M	mile-a-minute vine	<i>Polygonum perfoliatum</i>	H
leafy spurge	<i>Euphorbia esula</i>	H	pale swallow-wort	<i>Cynanchum rossicum</i>	H
lesser celandine	<i>Ranunculus ficaria</i>	C	periwinkle	<i>Vinca minor</i>	M
mugwort	<i>Artemisia vulgaris</i>	H	sweet autumn clematis	<i>Clematis terniflora</i>	C
musk thistle	<i>Carduus nutans</i>	H	vetch	<i>Vicia cracca</i>	M
narrowleaf bittercress	<i>Cardamine impatiens</i>	M	wintercreeper	<i>Euonymus fortunei</i>	H
pepperweed	<i>Lepidium latifolium</i>	H	wisteria	<i>Wisteria sinensis</i>	C

- Ranks: H=High, M=Medium, L=Low, C=Caution, FN = Federal Noxious Aquatic List

Appendix F  
Example Notification Signage

# NOTICE

## PESTICIDE APPLICATION

Bloomington Parks and Recreation has contracted Eco Logic LLC to apply herbicides to this area. The goal of this application is to prepare the site for installation of a native grass and wildflower planting in spring of 2017. The presence of several invasive and non-native species on the site would prevent the establishment of the native plants unless the invasives are removed prior to installation. The flood prone nature of the site does not allow for other control methods such as tilling due to the threat of erosion.

Target Pests:

Pesticide 1 Name:

Active Ingredient:

EPA Registration Number:

Pesticide 2 Name:

Active Ingredient:

EPA Registration Number:

Date

Treated: \_\_\_\_\_

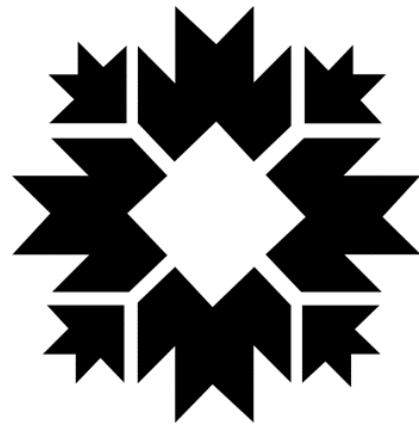
OK to enter

after: \_\_\_\_\_

For Questions contact: Steve Cotter

(812)349-3736

[cotters@bloomington.in.gov](mailto:cotters@bloomington.in.gov)



**CITY OF BLOOMINGTON**  
**parks and recreation**