SUBJECT Integrated Pest Management Policy		APPLIES TO PRAC
EFFECTIVE DATE 01/27/2025	**REVISED DATE**	**NEXT REVIEW DATE**
APPROVED BY **Luis Ruiz**	**TOTAL PAGES** 29	**POLICY NUMBER**

City of Lawrence

Parks, Recreation, and Culture

IPM Policy Manual

March 1, 2009/Revised January 27, 2005

Table of Contents

Appendant Information found on PRC IPM Website:

Park maps showing Green/Yellow Zone Designations
Common Pest Descriptions
Exemption Requests
Current Allowed Pesticide List
Past Pesticide Usage Reports

Section I. - Preamble

On March 29, 2005, the City Commission, Lawrence Parks and Recreation Department (now **Parks, Recreation, and Culture** (PRC)), and local citizens began development of a pesticide reduction plan for the city's parks. Category I and II pesticides were eliminated from Parks and Recreation's product list, allowing the purchase of only category III and IV pesticides. This product list of pesticides was consolidated throughout the department and made available to the public. Several alternative products were also purchased and tracked for their effectiveness and comparative costs.

An update to this policy was undertaken in March of 2024 to bring the policy up to date with current pesticide best management practices (BMP's), respond to additional public input, and align with the City of Lawrence Strategic Plan Outcome of Unmistakable Identity, and Commitments of Efficient and Effective Processes, Sound Fiscal Stewardship, Engaged and Empowered Teams, and Environmental Sustainability. In 2025 the policy was adjusted to include Municipal Service and Operations (MSO) applications and properties.

Integrated Pest Management (IPM) is an ecological approach to pest management designed to prevent and control undesirable weeds, insects, fungi, and rodents. 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, resist, and control pests that interfere with the purpose and use of a particular site. When a pest has exceeded a predetermined threshold at a particular site, all appropriate pest control strategies are employed including cultural, biological, and, finally, utilizing chemical controls, within the guidelines of this policy. When staff monitoring of a site discovers a pest problem and determines it to be above the threshold level, IPM implements the use of biological and cultural control practices as a first response to a pest problem, and chemical control as a last resort.

Cultural Control tactics are physical adjustments made to the landscape to alter pest activity, reproduction, or survival. The adjustments can be made by hand or with mechanical devices. Cultural control tactics include, but are not limited to, mulching, pruning, selection of pest-resistant plant material and removal of debris from landscape beds. This method has only limited effect on non-target organisms and the environment. **Biological Control** is managing pests by using their natural enemies – predators, parasites, and pathogens. Biological control is often natural and maintains pest populations at a tolerable level. If pests are not naturally maintained the habitat of the landscape may need to be altered to attract the natural enemies. Also, predators, parasites or pathogens could be physically introduced into the landscape. These tactics can be effective in certain situations but are more time-consuming and subject to other environmental factors outside of staff control. Biological control generally exceeds cost thresholds that are limited by available staff, and funding, resources. **Chemical Controls** are generally pesticide products and may be employed after other forms of control have been considered and/or implemented.

IPM offers park staff a system of managing parks without sole reliance on pesticides. In turn, this provides a safer place for people to enjoy the outdoors, improves the health and vitality of the park's ecosystem, and aligns with Commitments in the City's Strategic Plan.

The pesticide information and policy in this document pertains to areas under the management of PRC and MSO. Those areas will be designated as either: Parks, Cemeteries and Athletic Complexes; Non-Park City Properties; City Rights of Way (ROW); Levee; Trails; Corps of Engineers Leased Property (Clinton Lake Regional Park); Eagle Bend Golf Course (EBGC); MSO; MSO Controlled Access (MSO-CA); Natural Areas-Woodland/Grassland (NA-W/G); and Natural Areas- Remnant Prairie (NA-RP).

Section II. - Mission Statement

It is the mission of PRC's IPM policy to sustain the beauty and recreational value of its parks in an environmentally friendly, safe, and responsible manner. In doing so, the department will consider the impact to the environment, and the health of the public and city staff.

Section III. – Proactive Goals of IPM

Scientific research indicates acute or chronic exposure to certain pesticides can cause health problems. This is a concern for the public, as well as staff.

Pesticides can also pose an environmental hazard. The movement of pesticides into waterways, wetlands, water sources, and impact to **Non-Target Organisms** is of concern.

The purpose of this IPM policy, instituted by PRC, is to:

- Create a unified PRC policy to correlate pest management practices throughout the entire department.
- Identify locations where pesticides are currently applied.
- Minimize the risk of pesticides to human health or environmental risks by:
    - A.) Encouraging the use of effective, less-hazardous pest reduction alternatives.
    - B.) Reducing the number of pesticide products utilized.
    - C.) Decrease the quantity of pesticides applied, system wide.
    - D.) Promote responsible application to reduce nontarget adverse effects on staff, public, and natural resources.
- Learn about plants and pests to establish an action threshold of pest tolerance at park sites.
- Conduct an annual IPM Policy training for staff to review policy, address risk and safety factors (protective equipment, signage, and weather conditions), new pest control methods, and other pest management practices.
- Establish consistent written documentation of pest activities, and to control record -keeping system throughout the department.
- Create a consistent public notification procedure on when and where pesticides are applied.

Section IV. - City Parks

This IPM plan will only be utilized for areas categorized as parks, athletic complexes, cemeteries, trails, and Natural Areas- Woodland/Grassland, and Natural Areas- Remnant Prairie, and will uphold our policy of no pesticide application in chipped playground and park shelter areas within our parks. This plan will exclude city right-of-way locations, including medians, city-owned public buildings, levees, Eagle Bend Golf Course (EBGC) and all other areas maintained by the city.

Each park, athletic complex, and cemetery is individually separated into zones designated by color, the **Exposure Reduction Zone System**. These zones are labeled either green or yellow. An area labeled as a **Green Zone** is parkland where pesticides are not programmatically applied in the management of the park. An area labeled as a **Yellow Zone** is parkland where pesticides can be utilized as a maintenance tool to manage the park, within the constraints of this policy.

The Exposure Reduction Zone System allows the department to standardize pesticide procedures and produce a reduced- risk pest management strategy.

Objectives of the Zone system are:
1. Select specific risk reduction goals for the green zone management.
2. Communicate to, and educate the public on, the general level of pesticide hazard on a site-by-site basis through the colored zones map.

Green Zone:

Green Zones are areas that exist as reduced–risk pest management areas, with a goal of no pesticides. Only very low-hazard materials will be applied to that area with an approved **Green Zone Pesticide Exemption Request**, based upon the surpassing of an established pest threshold.

Yellow Zone:

Yellow Zones are areas that will be managed with low-hazard materials. The aim is to manage these parks with a minimal amount of pesticide to meet the criteria for established **PRC Maintenance Modes**.

Natural Areas:

Two designations of Natural Areas are included in park areas. These are Natural Area-Woodland/Grassland and Natural Area- Remnant Prairie. Pesticide applications in these areas will be thoughtfully considered to encourage the natural biodiversity that occurs in these sensitive areas. In most cases, application will be limited to the control of Noxious and Invasive Pests that may threaten the existing biodiversity in the area. While all natural areas will reside in Green Zones, the designation of Natural Area- Remnant Prairie will require an approved **Natural Area- Remnant Prairie Exemption** form for any pesticide application to ensure the protection of these rare natural resources.

MSO Properties:

Two designations of MSO Properties exist. These are MSO, and MSO Controlled Access (MSO-CA). The Controlled Access designation denotes that the area is accessible only by authorized individuals, such as areas within a perimeter fence at a facility or property.

Special Circumstances Exemptions\Pest Management Action Plan:

Green Zone Pesticide Exemption Request- In some cases, a particular area is managed as a Green Zone, but cultural and mechanical means and other non-pesticide control methods have proved ineffective. A special circumstance exemption may be allowed. Reasonable examples may include- reduction in a health hazard such as poison ivy near frequent human activities; reduction in invasive, and noxious, plants such as Bermuda grass, Nutsedge, and other weeds in park turf & landscaping; woody plant and noxious/invasive weed encroachment into Natural Areas; and/or ensure compliance with state/county regulations for noxious weeds. Staff must make written requests to the Assistant Director for Parks.

Temporary Pesticide Product Request- Extraordinary circumstances brought on by changing conditions such as climate shifts, emergence of periodical pests, and the introduction of exotic/invasive pests may necessitate swift response to protect plant material within the park system. Staff may request temporary approval of a pesticide product to be used on a limited basis from the Assistant Director of Parks to address the issue. Request will include the timeframe for expiration of the temporary approval and should only be approved under extraordinary circumstances. Temporary products could be added to the Approved Pesticide List under the standard process after, or before expiration of, the temporary approval.

Natural Area- Remnant Prairie Exemption- Control of Invasive Species is mandated by law, and control of Invasive Species is desirable to maintain the biodiversity of these native areas. These exemptions will receive the highest level of departmental scrutiny to prevent collateral damage of valuable biodiversity. Spot spraying, by hand may be allowed. Blanket spraying with boom sprayers shall not be permitted.

Appendant to this policy are individual photos of each park property selected to be involved in this IPM policy, and the areas designated as Green Zones and Yellow Zones. Yellow zones are denoted as yellow hatch marked areas, and Green Zones are all other areas. Also included is a chart which displays park acreage; areas of the park receiving pesticide applications; and the percentage of the park designated as Green and Yellow Zones.

Section V. - IPM Protocol

IPM protocol is a written procedural method used to determine the proper plant and/or pest management tactic for each situation.

A. Monitoring

In an IPM program, monitoring is the repeated observation of site conditions. These conditions are a key factor in determining the diagnosis and treatment of pest problems. Site conditions to observe include weather patterns, cultural practices, plant material and pests present, and site disturbances that occurred in the area; past or present. These site conditions can manipulate plant vitality and pest activity.

Monitoring of site conditions, plant, and pest information will help determine the best control option to use for current and ongoing maintenance situations. This will also allow staff to detect a potential pest problem prior to its exceeding an **Action Threshold**.

B. Action Threshold

An action threshold will help the staff determine when a pest population, or the injury it causes, exceeds a tolerable level. A high action threshold level means pests will be tolerated longer vs. a low action threshold level where pests will be tolerated for a shorter period before action is taken. The threshold level will vary depending upon the **Maintenance Mode** of the site, use of the site, value of the threatened plant material, expense, or duration for recovery, and the amount of use by the public. Determining the appropriate threshold requires knowledge, experience, and foresight and should be revised based on continued observations and experience.

Aesthetic thresholds are difficult to establish because tolerance will vary among staff and the public, as well as vary from site to site. Aesthetic thresholds will in large be set by the public and their expectations in the appearance of landscaped areas. The public generally has a low acceptance for aesthetic plant injury and as a result, thresholds will be set accordingly.

Plant value will determine an action threshold. For example, a tree will gain functional and aesthetic value through its maturity. These attributes include shade, air quality, water quality, and habitat. The value of these attributes increases over time and can be assessed as a monetary worth. If a pest population reaches a point where the injury level causes the health or structure of a tree to be

compromised, and pesticides can be applied to save the plant, then careful attention to the monetary value of the tree against the risk of pesticide application will be evaluated.

The purpose and safety of a site will drastically affect the threshold levels. For example, a soccer field needs to be maintained at a high level to reduce injury to users. Therefore, it will have a low action threshold (pests will not be tolerated). On the other hand, a wilderness area with a nature trail has a high action threshold. The management and role of these two sites is entirely different. Any pest at a site creating a risk to the public, or staff, will be dealt with in an urgent manner. For example, poison ivy in a high-traffic area will have a low action threshold, as this poses health risk.

Finally, these action thresholds will also be based upon what zone the pests are found. If the pest problem is in a green zone, the tolerance of the pest will have to be higher than if the pest were in a yellow zone. When pests are found in a green zone, alternative methods will be exhausted.

Appropriate threshold levels may vary at each location and is subject to staff experience and knowledge. The amount of damage that can take place before pest infested plants become aesthetically intolerable, are a safety issue, take away from the purpose of the site, or become an economic threat will determine the action threshold.

Green Zone Pest Management Exemptions and Vegetation Management

Most pest management efforts performed by the PRC are for the control of weeds, and other unwanted vegetation, for the purposes of aesthetics, safety, reduction of plant competition, control of noxious weeds, and to avoid undue strain on department resources.

- AESTHETICS - Uncontrolled weed growth throughout the city in general and in the parks, traffic medians and other landscapes in particular lead to an unkempt appearance.

- SAFETY - Uncontrolled weed growth can interfere with visibility along our streets and create unsafe situations for pedestrians, cyclists, and motorists.

- COMPETITION - Those plants commonly referred to as weeds are well known for their ability to adapt to a variety of environments and out-compete landscape plants for water and nutrients. For landscape plant materials to become established, weed control efforts may be necessary.

- NOXIOUS WEEDS- These weeds are listed by the State or County as weeds that must be controlled by the landowner because of the risk of damaging infestations within the jurisdiction.

- UNDUE STRAIN ON RESOURCES- Infestations covering an unusually large area or requiring an unreasonable amount of staff time to mitigate through cultural or biological means may qualify for an exemption to align with the Strategic Plan Commitments of Efficient and Effective Processes, and Sound Fiscal Stewardship.

The **Green Zone Vegetation Management Action Plan** will be utilized for Landscape, Turf, Playgrounds, Insects, Diseases, Weeds and other circumstances requiring an exemption for pesticide application. Below is a detailed action plan for each different green zone area exemption.

GREEN ZONE AREA EXEMPTIONS AND VEGETATION MANAGEMENT ACTION PLAN

General Landscaped Areas

LOCATION	ACTION THRESHOLD	ACTION
All areas of departmental responsibility.	Weeds covering 10% or less of the ground where not desired.	Mechanically remove. Consider use of densely growing plant materials.
	Weeds cover more than 10% of the ground where not desired.	Any of the above non-chemical tactics. Spot treat with appropriate herbicide.
	Weeds cover 5% or less of the ground in planter beds.	Mechanically remove. Where possible, add mulch to a minimum depth of 2 inches. Consider use of densely growing plant materials.
	Weeds cover more than 5% of the ground in planter beds.	Any of the above non-chemical tactics. Spot treat with appropriate herbicide.
	Any area historically requiring weed control measures.	Possible spring and/or fall application of pre-emergent herbicide in limited areas.

Turf Areas

LOCATION	ACTION THRESHOLD	ACTION
Turf areas – Parks	Broadleaf or grassy weeds cover less than 20% of the turf area	Observe proper mower sanitation. Remove mechanically. Re-evaluate cultural practices, test soil fertility.
	Broadleaf or grassy weeds cover 20% or more of the turf area.	Any of the above tactics. Spot treat with appropriate herbicide. Fall Overseed
Turf edges that can be edged with power edger.	Any time edging is necessary.	Use power edger or string trimmer.
Turf edges that cannot be edged with power edger.	Turf growing up to 3 inches over pavement edge.	Remove mechanically.
	Turf growing more than 3 inches over pavement edge.	Any of the above tactics. Spot treat with appropriate herbicide and remove debris.
Turf reclamation	Any area requiring weed control measures during turf establishment.	Possible Spring or Fall application of pre-emergent herbicide in selected areas for a limited duration until turf is established (1-3 years).

Playgrounds/Shelter

LOCATION	ACTION THRESHOLD	ACTION
All Park Areas.	Weed removal for preseason preparation of summer playground events	Mechanically remove weed growth with equipment.
	Weed encroached up to 12 inches into playground surfacing	Hand pull weeds, use edger or string trimmer.
	Weed encroached 12 inches or more into mulched areas of playground.	Any of above tactics. Close playground for 7-10 days during procedure.

		Close public access by fencing and signage. Spot treat with appropriate Herbicide. Follow up to remove mulch and debris. Replenish new mulch and re-open area.
	Weed removal in landscaped shelter areas.	Mechanically remove Weed barrier cloth under 2" mulch

Miscellaneous Areas

LOCATION	ACTION THRESHOLD	ACTION
Asphalt or concrete roads, trails, pathways or other paving and hard surfaces.	Weeds growing in joints or cracks.	Mechanically remove Any of above tactics Spot treat with appropriate herbicide

C. Control Technique Selection

When a pest problem goes beyond its set threshold, staff will choose the appropriate pest control action based on the following guidelines:

a. least hazardous to the applicator
b. least hazardous to the public and the environment
c. cost-effectiveness in the short and long-term
d. least hazardous to non-target organisms

D. Control Tactics

There are three types of pest control used in an IPM strategy: cultural, biological, and chemical controls. IPM implements the use of cultural and biological controls first, with chemical controls as a last resort. Often a combination of these can be the most effective.

1. Cultural controls- Cultural control tactics are physical adjustments made to the landscape to promote plant health and reduce pest activity, reproduction or survival. The adjustments can be made by hand or with mechanical devices.
   Cultural control tactics include but are not limited to:
   - Mulching
   - Pruning
   - Removal of pest infected debris in park areas
   - Overseeding

- Appropriate plant selection
- Watering practices
- Mowing frequency
- Soil considerations

2. Biological controls- Biological control is managing pests by using their natural enemies – predators, parasites, and pathogens. Biological control is often natural and maintains pest populations at a tolerable level. If pests are not naturally maintained the habitat of the landscape may need to be altered to attract the natural enemies. Also, the predators, parasites or pathogens could be physically introduced into the landscape. Other biological control tactics include:
    - Introduction, conservation, and augmentation of natural pest enemies
    - Use of plant materials that are disease and insect resistant
    - Biological/organic products and alternative chemical controls
    - Create and preserve biological diversity using landscape design

3. Chemical controls- managing pests by use of pesticides. Chemical controls are only allowed when cultural or biological controls are ineffective. Chemical controls should be employed as a last resort and should follow these guidelines:
    - Prior to making any application, the location of the pest problem and host should be evaluated and then use the least toxic pest control action.
    - Least toxic compounds, pesticides in the EPA Toxicity Category III & IV, and those that are found on the Allowed Pesticide List will be considered first.
    - Before the application of a pesticide, all labels and warnings should be read and pesticides should be applied in a manner consistent with labeling and applied only to target pest.
    - All pesticide applications will comply with signage and notification procedures as specified in this policy. Accurate records of pesticide applications should be kept and include the target pest, type and quantity of pesticide used, EPA registration number, location of application, date, time, and weather conditions at time of application.

E. Exemptions

SPECIAL CIRCUMSTANCES EXEMPTIONS

VEGETATION MANAGEMENT
ACTION PLAN

Significant Invasive/Noxious Weeds

LOCATION	ACTION THRESHOLD	ACTION
All areas of departmental responsibility.	Poison ivy growing in any area with potential for contact.	Remove mechanically.
	Noxious weeds to be fully controlled by Kansas, Douglas County, or US Corps of Engineers regulation	Spot treat growth with appropriate, least toxic herbicide. Spot treat regrowth with appropriate, least toxic herbicide.
	Significant invasive/aggressive species: weeds, including clover, Bermuda grass, Nut Sedge, Sandbur and Dandelions.	Remove mechanically. Treat regrowth with appropriate herbicide.
	Unwanted tree or shrub species: Bush Honeysuckle, Elm, Ash, Honeylocust, and Mulberry	Remove and stump treat with appropriate herbicide. Pre-establish appropriate ground cover.
Natural Areas- Native Grass, and Natural Areas- Remnant Prairie	Damaging woody plant encroachment	Regular prescribed burning Hand cutting and cut stump pesticide treatment Targeted pesticide spray application

INSECT PEST MANAGEMENT

Insect pest management involves controlling damaging insects as well as those causing nuisance problems. These pests can cause significant flower and foliar damage, physically weaken plants, spread disease, and provide opportunities for disease and other insects to invade plants. Insect problems identified include: two spotted spider mite, bagworms, scale, caterpillars, borers, grubs, aphids.

Pests and/or infested plant parts should be removed by hand when possible. Removal of affected is effective in controlling certain insect species. Periodic, high pressure water washes can be used when insect populations are low.

Culturally, maintenance of plant health is of great importance in insect pest control. Properly cared for plants are less stressed and therefore less susceptible to insect infestation. Along the same lines, plant materials should be selected with care, matching species to conditions present at the site.

Biologically, beneficial insects (natural enemies) provide the single greatest effort in controlling plant pests. This is why insect infestations are relatively rare. Maintenance of beneficial insects is the key to controlling pest problems. This is accomplished by judicious use of pesticides and encouraging additional habitat.

Pesticides are used in the control of plant damaging pests, and where effective alternative control methods exist, pesticides are used as a last resort.

PLANT DISEASE MANAGEMENT

With few exceptions, plant diseases do not constitute a severe enough problem to require extensive control efforts on our part. We have adopted a non-chemical approach in dealing with these diseases. Replacement of vulnerable plants with disease-resistant selections is the preferred approach.

INSECT PEST MANAGEMENT ACTION PLAN

LOCATION	ACTION THRESHOLD	ACTION
All City maintained trees and landscape plants 2nd flowers.	APHIDS: Less than 10 aphid of any growth stage found on any 10 leaves OR less than 10 aphid found on the terminal 6 inches of growth on any 10 terminals OR foliar distortion visible on less than 20% of foliage.	Address cultural needs, avoid high nitrogen levels. Prune out infested areas. Use high pressure water wash. Control ants where present. Use reduced risk insecticide (soaps, oils).
	APHIDS: 10 aphid of any growth stage found on any 10 leaves OR 10 or more aphid found on the terminal 6 inches of growth on any 10 terminal stems OR foliar distortion visible on 20% or more of foliage.	Any of above tactics. Treat with insecticide.
	SCALE: Scale visible on less than 20% of plants branches.	Address cultural needs. Control ants where present. Prune out infested areas.
	SCALE: Scale visible on 20% or more of plants branches.	Any of above tactics. Treat with insecticide.

LOCATION	ACTION THRESHOLD	ACTION
All City maintained trees and landscape plants.	MITES: Mite damage visible on less than 25% of foliage.	Address cultural needs, avoid high nitrogen levels. Address site conditions that promote population build-ups. Use high pressure water wash.
	MITES: Mite damage visible on 25% or more of foliage.	Any of above tactics. Treat with miticide.
	WHITEFLY: Whitefly of any growth stage present on 10% or more of foliage.	Any of above tactics. Treat with insecticide.
	CATERPILLARS: Lepidoptera larvae causing damage to less than 10% of foliage.	Remove pests/prune out infested areas. Treat with B.t. if 1st or 2nd instar.
	CATERPILLARS: Lepidopteran larvae causing damage to10% or more of foliage. Included yellow necked caterpillars; fall web worm; tent caterpillars; petunia budworm.	Any of above tactics. Spot treat with insecticide.

LOCATION	ACTION THRESHOLD	ACTION
All City maintained trees and landscape plants.	BORERS: Signs of boring insects apparent.	Provide cultural needs. Specifically address drought stress. Prune to remove infested wood. Routine pruning only when adult borers are not present. Remove infested wood or

		plants with sufficient infestation that threaten other plants. Select proper replacement plant species.
All City maintained Ash Trees	Emerald Ash Borer (EAB): Presence of Ash Trees within Douglas County	Assess Ash tree for proper placement, health, and structural integrity If any of above assessments are POOR, schedule, or monitor, for removal If any of above assessments are FAIR, monitor for future decline If any of above assessments are GOOD, consider treatment for EAB

GREEN ZONE INSECT PEST MANAGEMENT EXEMPTIONS ACTION PLAN

LOCATION	ACTION THRESHOLD	ACTION
All City maintained Locust, Honeylocust and Ash trees.	LEAFHOPPER/PLANTBUG: (may exist singly or in combination) Trees show 20%, or greater, defoliation.	Use high pressure water wash. Treat with insecticide.
All City maintained trees and shrubs.	Bagworm infestation of any size and quantity. Historically may cause significant plant damage and infestations to many species of plants and spread to adjacent property. Unique to Kansas with large Eastern Red Cedar Populations.	Mechanical removal to destroy egg masses. Treat actively feeding stage with insecticides at any time. Timing sprays related to egg hatch is critical.
All City maintained Elm and Zelkova species.	ELM LEAF BEETLE: Less than 10% of foliage showing feeding damage.	Address sanitation; debris removal. Treat with B.t. if 1st or 2nd instar. Use sticky material to trap larva.

	ELM LEAF BEETLE: 10% or more of foliage showing feeding damage.	Any of above tactics. Treat with insecticide.

VERTEBRATE PESTS

Rats & Mice

Generally, mice are found indoors while rats are found out of doors. While a mouse will make its presence known through noise or droppings, the presence of rats is often harder to determine. If a rat is seen indoors or outside in the daytime it can be safely assumed there is a large rat population.

LOCATION	ACTION THRESHOLD	ACTION
All areas of departmental responsibility.	Evidence of mice is observed or one has been seen.	Eliminate entry sites. Eliminate food sources, provide proper sanitation. Safely set traps in areas of activity. Safely set bait stations in areas of activity.
	Evidence of rats is observed or one has been seen.	Eliminate entry sites. Eliminate food sources, provide proper sanitation. Evaluate habitat for modification or removal. Safely set traps in areas of activity. Safely set bait stations in areas of activity.

Moles

Though quite difference in appearance, diet and behavior, most people cannot differentiate the mounds caused by a gopher from those of a mole. Though beneficial in the sense that they aerate and turn the soil, both animals can be damaging to the landscape and, in the case of gophers, create holes that are tripping hazards. Oftentimes these holes are enlarged by dogs.

LOCATION	ACTION THRESHOLD	ACTION
All areas of departmental responsibility.	Evidence of mole is observed.	Physically remove mole. Trap; to be set only where it can be isolated from public interaction. Safely set burrow baits in areas of activity. Isolate from public interaction to prevent ingestion by pets.

MISCELLANEOUS, Beneficial, AND NUISANCE PESTS

Bees
Bees are a beneficial insect of immeasurable value because of their pollination efforts. Bees in general are not viewed by the department as threatening though bee stings are painful and cause extreme allergic reactions in some people. Where possible, every effort should be made to preserve bee populations both in physical activities as well as in the selection and use of pesticides. Occasionally situations arise when the relocation of a hive is necessary and local beekeepers will be contacted.

Other Pollinating Insects
These insects are valuable to humans, and other plant and animal species. Where possible, every effort should be made to preserve, and even encourage, pollinator populations through cultural practices, planting of preferred, and native, species as well as in the selection and use of pesticides.

Wasps, hornets, yellowjackets
These groups of stinging insects are collectively known as wasps. Most of these species are beneficial in that they are predatory on soft-bodied insects and are best known for their aggressive, unwanted behavior. Their stings are painful and can cause extreme allergic reactions.

Digger bees (digger wasps, sand wasps)
This is an interesting insect closely related to the wasp group. They are found in large colonies in most of the sand play areas in our parks. This beneficial insect looks and behaves somewhat like a yellow jacket and can be a cause for alarm. Though fully capable of stinging, this insect is not aggressive and is no cause for concern.

Spiders
Spiders are perhaps the most maligned and least understood of the animals found in the environment. Most people have some degree of aversion to spiders though they are extremely beneficial in their control of flies and other small insects. This area is home to many spider species found in a variety of habitats. The black widow spider, found in large numbers in this area, is also beneficial though its bite is painful and can be fatal. Because of most people's dislike of spiders, some degree of control is generally desired. With the exception of black widow spiders, chemical control is rarely warranted.

Ants

While it might be hard to get many people to agree, ants should be viewed as a beneficial species in the sense of the role they play in the environment. It is when ants get into homes and other structures that people experience the nuisance side of their behavior. An ant invasion into irrigation controllers is the single largest problem with ants experienced by the department.

Fleas
While reports of fleas in the parks or other recreational areas is not common, the potential for flea problems must be anticipated given the numerous dog areas and the possibilities for more in the future.

Birds
Though birds generally are not much of a problem, some species have on occasion become severe enough of a problem to warrant some type of action. The pigeon, for example, is one species of bird that has adapted quite well to the urban environment. They are notoriously filthy and can transmit some extremely serious diseases to humans.

There are only a few control methods available that can be utilized for birds and even fewer in urban settings. While some methods work well with some species, they cannot be counted on to work for all species.

LOCATION	ACTION THRESHOLD	ACTION
All areas of departmental responsibility.	BEES: tree containing a bee hive requires pruning, removal or other work that would disrupt hive.	Have beekeeper remove.
	BEES: A swarm of bees is observed on a plant, structure, etc.	Have beekeeper remove.
	WASPS: wasp, hornet or yellowjacket nest is found anywhere that is potentially threatening to patrons.	Physically remove or destroy nest. Treat nest with insecticide.
	SPIDERS: found in/on buildings.	Use broom, vacuum or water to remove spider and webbing.
	SPIDERS: Black widow is found and is threat to staff or patron.	Use above tactic. Physically kill spider. Use acaricide. Seal area if possible, to prevent future infestation.

	TICKS: Observed in parks and along trails and pathways.	Determine extent of infestation. Remind public users the importance of self protection. Use insecticide in limited areas.
	DIGGER BEES: Observed in play areas or other sandy areas.	Rake to discourage nesting.

PEST MANAGEMENT ACTION PLAN

LOCATION	ACTION THRESHOLD	ACTION
ROSES – generally move forward to plant disease resistant varieties most cost effective.	BLACKSPOT: Susceptible varieties showing signs of infection on 10% of foliage, OR Weather conditions favor development of disease ; 55-75EF and wet foliage.	Provide proper soil moisture and fertility. Remove infected plant parts including those which have fallen. Remove infected canes when dormant pruning. Avoid overhead watering. Treat with fungicide. Apply fungicide with dormant spray. Replace with resistant varieties.

LOCATION	ACTION THRESHOLD	ACTION
JUNIPERS, SPRUCE, ROSES, ZINNIA, DAHLIA, CALENDULA, OTHER SUSCEPTIBLE BEDDING PLANTS.	POWDERY MILDEW: Susceptible varieties showing signs of infection on 10% of foliage. Foliar Diseases: Cytosporia canker on spruce. Phomopsis blight on juniper.	Provide proper soil moisture, watering, and fertility to improve health of tree. . Remove infected plant parts + those which have fallen. Remove infected canes when dormant pruning and sanitize equipment. Prune to promote air circulation. Remove and replace with resistant varieties.
ROSES	APHID: 15 aphid found on terminal 6 inches including flower bud.	Insure proper cultural needs, avoid high nitrogen levels. Water wash at any time. Remove infested parts. Control ants if possible. Treat with insecticide, + with oil in dormant spray.
ALL PINES IN PARKS AND PUBLIC AREAS	Diplodia Tip Blight, Dothostroma Blight, Pine Wilt Disease	Remove dead/dying infested plants prior to March 1 and grind stump. Replace with native or adapted species.

Section VI. - Alternative Pest Reduction Management Options:

Cultural controls:

Mulching / Newspaper or: Mulching over several layers (4 minimum) of newspapers achieved several weeks seasonal weed control, similar to pre-emergent. Mulch depth must be limited to only a few inches (2-3") to promote plant health, and receive benefits of proper soil/water & air exchange. Recommend using only once a year, such as with planting annual flowers. Some seasonal labor is currently employed to assist with this labor-intensive process. Process of layer with newspapers required 2x regular man-hours.

Impact: A twice-a-year method would be more effective on fall weeds but create more work because slowly decomposing wood chips will have to be removed. Any extra mulch depth (4-6"), could be detrimental to the landscape plants by causing anaerobic conditions in the decomposing mulch. In addition, it could create a microenvironment for insects and hold excessive amounts of moisture. In landscape areas, such as downtown, where flower displays are rotated more often, the process becomes increasingly more labor intensive and requires additional resources. Compared to conventional pesticide application for weed control, 3-4 times the time, equipment and labor involved.

Mulching only: annual application: 100% of all city landscape areas are mulched with or without use of newspapers, with reasonable weed control success. The main advantage of mulch is to help reduce soil temperature fluctuations, water evaporation and to gradually add organic matter to the soil.

Manual hand cultivating: This fundamental practice is used by landscape staff in all landscape areas. Much hand work is involved in caring for bedding plants, such as deadheading old flowers, watering, pruning, thinning, weeding, and other hand to hand attention to detail. This requires a trained and dedicated staff with an eye and interest for detail-oriented work. Additional seasonal labor is employed to assist with this process. Current staffing levels make this difficult to sustain at a previous level.

Turf Aeration: A practice used in parks, municipal building lawns, golf course, and athletic fields to improve diffusion of oxygen and water movement in compacted soils near turf grass roots. Aeration requires specialized equipment and increased labor force to facilitate work. It is advantageous to the turf roots and increases success of new seed beds in both irrigated and un-irrigated areas.

Soil improvements with compost: For new city landscape and turf projects, much of the clay soil structure has been improved by using organic matter from a city resource of turf grass/leaf compost. This is inexpensive, nutrient-rich, in good supply and available in large tonnage quantities. Use of compost over two years old to avoid damage from temperature fluctuations, must be lower than 150 degrees. Best success if incorporated as a moderate amount into the soil prior to any planting or seeding. Good source of microorganisms.

Impact: Overuse can lead to insect problems, or nutrient burn of plant tissue. Staff must have knowledge of product, and how to use it to avoid associated problems. This strategy must rely on natural time and temperature to break down compost into a useable product.

Soil improvements with Hydrogel Products: A synthetic acrylic polymer was used downtown (3 years) with horticultural applications, resulting in reduced water needed by about 30%. Water loss due to evaporation and drainage was reduced. The product is neutral pH and releases its stored water back to the plants. Staff is researching product for street tree or other water challenged applications.

Impact: Effective, but expensive and must be incorporated into the soil.

Irrigation and Surface Water Management: This practice targets water distribution only to those plants needing water to sustain life through the photosynthetic process. Excess water can possibly lead to increased disease and weed problems in turf and landscape beds and cause rapid decline in Oak tree species in the parks.

Impact: Management is highly variable, due to site conditions at various locations in the parks system, and many crews & staff members in control of watering methods. Ongoing maintenance requirements of numerous systems and proper operation will require additional resources.

Sanitation: Remove disease, insect or nematode infested plantings such as dead Elm, Pine, or Juniper plantings, which might lead to a public nuisance situation. Clean up, remove, or destroy the debris or other sources of problems. Eliminate planting of these species in public and private spaces in Lawrence through site plan process and ordinance update. Labor intensive process that requires additional resources.

Biological Controls:

Host plant resistance: Use design principles to create new spaces and purchase landscape and/or turf plants that are resistant to disease and insect problems. This includes use of some native and/or adaptable plants that can thrive in certain undesirable environmental conditions. For example, staff created a successful Public Demonstration Xeriscape Garden, with the use of native materials and labels for the public to understand. This was completed using little water resources.

Landscape Design: Preserve and create biological diversity in park areas by planting diverse populations of plants. Regarding plant selection, staff has adopted a recommended tree list for Northeast Kansas Northeast Kansas, along with another list from local architecture firm Multistudio with plant selections that are better adapted to the local climate and conditions. Staff avoid planting plants that are continual nuisance problems, such as silver maples, hackberry, mulberry, hawthorns, ash, honeysuckle, Scotts pine, Austrian Pine, etc.

Biological / Organic product trials: Use Organic products that are environmentally friendly. Examples: 'Conserve' product used successfully for bagworm control, 'Armacarb' used for disease control with limited success, Horticulture Ultra Fine Oil was successfully used on scale and spider mites, and Insecticidal RTU Soap products were used with limited success on spider mites, pine sawfly, other caterpillars (poor results on bagworms). The less expensive, more applicable, insecticidal soap concentrate product was not available with a caution label, and therefore did not meet our policy. Neem oil was also used according to label with poor results for bagworm control.

Impact: Staff knowledge and budget restraints limit progress in this area. Short residual solution that leads to increased treatments and trips to site will increase fuel costs for city vehicles.

Section VII. – Pesticide Information

The focus of an Integrated Pest Management system is to encourage plant health care practices which limit the need for pesticides. If a pesticide application is warranted, the use of materials with the least environmental impact should be emphasized. Prior to making any application, the location of the pest problem and host should be evaluated and then an appropriate control chosen. Before applying any pesticide, it is imperative to read and follow the label directions, and only apply that product in a manner which is consistent with the label. Pesticide applications may be made only under the supervision of a licensed commercial applicator. After the application of a pesticide, accurate record keeping will help determine effectiveness and cost of the program. The record keeping will include the following information:

-The target pest
-The type and quantity of pesticide used
-EPA registration number
-The specific location of the pesticide application
-The date and time of application
-Exemption granted for the application
-Weather conditions at time of application

Record keeping will ensure that ineffective methods are not duplicated. City staff will post annual pesticide application reports on the IPM Policy Website, and retain such records for 3 years, per regulatory requirements.

Establishment of an Allowed Pesticide List

The IPM Coordinator and the IPM Committee will maintain, and review annually in February, a list of pesticides allowed for use by PRC.
The purpose of the list will be to:

1. Review current pesticides used by different divisions within PRC to maintain parks, cemeteries and athletic fields, Trails, and Natural Areas.
2. Reduce the number of pesticide products being used by PRC
3. Provide staff with a selection of pesticides to meet specific pest control needs when action thresholds warrant
4. Evaluate, identify and inform staff about environmental impact of pesticides
5. Identify products to remove, add, or to remain on the list

The Allowed Pesticide List will include the following:

1. Product/Trade Name
2. Common Name/Active Ingredient
3. Category/Signal word
4. Type of Pesticide - herbicide, insecticide etc.

Selection of products on Allowed Pesticide List

The selection of the products will begin with staff submitting a request for a pesticide to be placed on the Allowed Pesticide List for the upcoming year. Placement on the list doesn't indicate that it will be used only that it may be used. The decision on whether a product will be used will be the decision of the staff responsible for maintaining that area.

The purpose of this list will be to provide staff with a resource of products available to use during the current year. The list will be reviewed annually in February and be included as an attachment to the IPM manual. During the annual review process products may be identified for removal, recommended for addition, or allowed to remain on the Allowed Pesticide List. An amendment may be requested throughout the year to add/remove a pesticide from the Allowed Pesticide List, which will be reviewed, and recommended for inclusion, or rejection, by the IPM Committee

Criteria for selection and inclusion on the Allowed Pesticide List will be based on the following:

- Toxicity of product – Allowing only the use of pesticides with the EPA Category III and IV with Label Signal Word "Caution" or "Keep out of Reach of Children"
- Environmental Impact – evaluating and identifying pesticide for lower environmental impact
- Restricted use pesticides – EPA product registration
- Pesticide label exempt product – EPA product registration
- Non pesticide product
- Bio Pesticides and Organic Pesticides
- Duplication of product

Toxicity of Product - Hazard Category and Label Signal Words

Any product sold as a pesticide must be registered by the Environmental Protection Agency. Each pesticide is assigned to a hazard category based on the acute toxicity of the product. The acute toxicity is the pesticide's ability to cause immediate harm. The EPA requires testing which evaluates each pesticide for acute toxicity based on the pesticide's hazard through ingestion, inhalation, and skin adsorption along with its potential for eye or skin irritation.

The EPA assigns each product to one of four hazard categories. The categories are represented by I, II, III and IV with I being the most hazardous. Also, each product is also assigned a corresponding signal word which appears on the product label. Category I pesticides are identified on the label with the signal word "Danger" or "Danger Poison" and Category II pesticides are identified on the label by the signal word "Warning". Category III pesticides are identified on the label with the signal word "Caution" and Category IV pesticides are identified on the label by the signal words "Keep Out of Reach of Children". Categories III and IV are usually not distinguished from each other since most category IV products include the "Caution" signal word on the label.

Restricted use and General use Pesticides

The EPA groups pesticides into 2 categories, general use pesticides and restricted use. Pesticides labeled for restricted use can only be applied under the direct supervision of or by a trained and certified applicator. Restricted use pesticides carry the same signal words and hazard categories as general use pesticides.

Restricted use pesticides will not be allowed for placement on the Allowed Pesticide List. Use of restricted use products will only be allowed as specified in the Section "Policy Amendments"

Minimum Risk Pesticides

The EPA has granted labeling amendment status to certain products provided they meet the criteria outlined in "Minimum Risk Pesticides Exempted under FIFRA section 25(b)". The EPA maintains and updates this list of products.

Minimum risk pesticides will be reviewed for placement on the Allowed Pesticide List.

Non-Pesticide Product

This category would apply to products that are not pesticides but may be useful in certain instances for pest control. An example of these would be the propane torch. The use of these products will be recorded as part of the IPM program. Plant Growth Regulators would be an example of a non-pesticide product.

Bio Pesticides & Organic Pesticides

Biochemical pesticides, microbial pesticides and plant incorporated pesticides are examples of types of pesticides that include naturally occurring materials. Other pesticides are often referred to as organic pesticides meaning they are derived from natural sources. Although they are organic, they are still classified as pesticides and are potentially toxic and should be used with the same care as all pesticides. These products are required to have an EPA registration number as well as an approved label.

Duplication of Product or Product Types

Due to site conditions or type of application equipment available a product having different formulations may be listed on the Allowed Pesticide List.

More than one product which provides control for a specific pest may be placed on the Allowed Pesticide List. Generally, this is to reduce the chance of product resistance by pest populations. Where pest resistance is not an issue the number of pesticides used to control pests will be limited. In addition, a pesticide used to control a specific pest in turf grass may not be allowed to control that pest in a flower bed. This would require the use of two similar pesticides such as a pre-emergent herbicide.

Section XIII. - Signage and Notification

(A) Where PRC, or MSO applies any pesticide to a Park, Athletic Field, Cemetery, Trail, Natural Area- Native Grass, or Natural Area- Remnant Prairie, it must comply with the following notification procedures:

(1) Signs must be posted one hour before the application of the pesticide and remain posted for at least 4 hours, or the minimum re-entry period listed on the product label, whichever is longer, after application of the pesticide.
(2) Signs must be at least 8 1/2" x 11" size, and of a uniform design easily identifiable by the public and staff.
(3) Signs will contain the name and active ingredient of the pesticide product, the target pest, the date of pesticide application, the signal word indicating the toxicity category of the pesticide product and the name and contact number for the city department.
(4) Signs will be posted at every entry point where the pesticide is applied if the application is in an enclosed area. Signs shall be posted at any established entry point to that area- sidewalk, trail/street intersection, established natural surface trail, etc.
(5) Signs will be sturdy and able to sustain exposure to sun, wind, and rain.

(B) Where MSO department applies any pesticide to an area designated as MSO, it must comply with the following notification procedures:

(1) Signs must be posted one hour before the application of the pesticide and remain posted for at least 4 hours, or the minimum re-entry period listed on the product label, whichever is longer, after application of the pesticide.
(6) Signs must be at least 8 1/2" x 11" size, and of a uniform design easily identifiable by the public and staff.
(7) Signs will contain the name and active ingredient of the pesticide product, the target pest, the date of pesticide application, the signal word indicating the toxicity category of the pesticide product and the name and contact number for the city department.
(8) Signs will be posted at every entry point where the pesticide is applied if the application is in an enclosed area. Signs shall be posted at any established entry point to that area- sidewalk, trail/street intersection, established natural surface trail, etc.
(9) Signs will be sturdy and able to sustain exposure to sun, wind, and rain.

(C) Departments are responsible for making pesticide application information available to staff and public upon request, pursuant to applicable City and State Freedom of Information Act (FOIA), or Open Records Request Policies

Section IX. - Public Information

PRC shall maintain a webpage dedicated to this IPM policy displaying the current policy, Allowed Pesticide List, and annual pesticide application records. Exemption Requests, approved or denied, will not be posted publicly, but may be made available through FOIA, or Open Records Requests.

Section X. - Staff Training

The IPM coordinator, with the help of the IPM committee, will conduct a mandatory, annual training on the current IPM Policy to all staff who may apply pesticides. Managers and supervisors are expected to participate and fully support involvement by staff in all scheduled training.

Training necessary to maintain a **Kansas Certified Pesticide Applicator License** shall be monitored, and scheduled, by the individual's supervisor in a manner to maintain the hours necessary to recertify the applicator, every 3 years.

Section XI. – Policy Amendments

The process for filing for a policy amendment will begin with a staff member within the department who identifies a situation they feel is a public health risk, economic risk, or has been a steadily documented problem and requires an amendment to the policy to be solved. This staff member will have already exhausted all alternative cultural and biological control methods to alleviate the pest problem. Potential policy amendments include- changes of zone distinction from Green to Yellow, amendment of specific language of this policy, changes of action thresholds, etc.

The policy amendment request will be filed with the IPM coordinator. The coordinator will involve the Assistant Director for Parks to determine if the amendment should be proposed to the IPM committee. Depending on the Assistant Director's decision, the coordinator will present the amendment proposal to the IPM committee. An amendment may be granted or denied by the IPM Committee based on a majority vote of a quorum of present committee members For the purpose of this policy, present shall mean physically present in the meeting room, or present via videoconferencing software if the meeting is held in a remote or hybrid fashion. The Assistant Director of Parks will break any tie. Any amendment filed will be documented and the policy document on the website updated.

Section XII. – Staffing Descriptions

The implementation of this IPM Policy will create a need for staff to manage the process for further reduction of pesticide use. Additional staff in the field will also be needed to perform tasks previously accomplished using pesticides. The following are positions necessary for the success of the IPM policy. These positions may have been filled by existing staff. The Assistant Director for Parks will be responsible for appointing these positions.

IPM Program Coordinator- In addition to normal duties, this staff member will be responsible for:

- Coordinating and monitoring the IPM program for the department.
- Reviewing requests by staff for amendments to the IPM Policy, and if justified submitting the request to the IPM committee
- Devoting time to field inspections and becoming familiar with park sites and conditions and troubleshoot problems.
- Oversee annual staff training
- Facilitate IPM committee meetings.

- Facilitate Annual, February review of approved pesticide list to be posted by March 1 of each year.

IPM committee- The committee will be responsible for:

- Knowledge of IPM methods, as well as existing and new pesticide information.
- Determining and approving considerations for pesticide zones in each park.
- Field monitoring and testing of new IPM strategies.
- Reviewing, approving, and/or adopting any amendment requests to the IPM policy.
- Assist in annual staff training.
- Review and approve changes to the pesticide list to allow for changes in control conditions.
- Ensuring that education on IPM policy and changes to the policy are communicated to the public.

Certified Applicator-

- Each department with responsibility for pesticide application will retain a reasonable number of Kansas Certified Pesticide Applicators.

Staff who may apply pesticides without certification shall be within phone contact of a certified applicator, and require training on the content of this policy, as well as the pesticide labels for which they are applying.

XIII. - Conclusion

The City of Lawrence PRC is committed to reducing the amount and types of pesticides used throughout the park system, and the associated risks. Pesticides use will be evaluated by the IPM coordinator and IPM committee. This policy will assist the department in maintaining the high-quality park properties and the health and safety of its citizens, staff, and the environment. PRC currently has 92 percent of park properties zoned green.

The City of Lawrence is recognized as a leader in the Integrated Pest Management field and is acknowledged as one of the first municipalities in the Midwest to institute an Integrated Pest Management policy. It is important the citizens of Lawrence continue enjoying park properties. This continued park quality will garner public support for IPM and retain the City of Lawrence's parks and recreation tradition.

Section XIV. - Definitions

The subsequent terms have the following definitions:

IPM – A system of controlling nuisance wildlife that uses a combination of methods to maximize the effectiveness of control, while minimizing pesticide applications and the potential hazards associated with their use. IPM offers park district management and staff a way of managing parks without depending on pesticides, which in turn provides a safer place for people to enjoy the outdoors, improves the health and vitality of the park's ecosystem, and ultimately reduces maintenance needs and costs.

IPM Coordinator – Existing staff member put in charge of pesticide applicators for each department, as well as contracted pesticide applicators. In charge of all dealings with pesticide application and pesticide training for each department.

IPM Committee – Committee made up of 3 to 5 individuals that will oversee the work done by the IPM Coordinator.

Governing Body – This group will consist of the City Commission. They will grant support for IPM progress, as well as gather public input for consideration.

EPA – The Environmental Protection Agency, the federal agency responsible for regulating environmental hazards.

Long-term IPM methods – Improving site conditions is the base of a successful IPM program. By modifying the soil, landscaping, and maintenance methods, plant health and pest resistance can be significantly improved, which leads to a higher level of pest tolerance and decreases the need for pest control activities.

IPM report – This is an overall summary created by the IPM coordinator and the IPM committee of that years IPM program. This report will also contain any emergency treatments and an explanation of why they were necessary.

Pest – Living organisms that occur where they are not wanted or that cause damage to crops, humans or other animals. Examples include insects, mice and other animals, unwanted plants (weeds), fungi, and microorganisms.

Pesticide – Any substance or mixture of substances that is assigned to any Toxicity Category of the U.S. Environmental Protection Agency and that is used to for defoliating or desiccating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest. Pesticides include, but are not limited to, herbicides, fungicides, and insecticides.

Active ingredient – In any pesticide product, it is the component that kills, or otherwise controls, target pests. Pesticides are regulated primarily based on active ingredients.

Applicator –Individual applying the pesticide.

Licensed Commercial Applicator – An individual who possesses the proper training and licensing to apply pesticides or supervise pesticide application.

Green Zone – Area inside each individual park where pesticides are not applied without an exemption being granted.

Yellow Zone – Area inside each individual park where pesticides labeled by the EPA with a caution label are used to control pests.

Organic products – Products created from natural materials to assist in the control of pest populations. Examples include, but not limited to, vinegar, flame torch, and orange extract.

Biological control - The use of animals and organisms that eat, kill or out- compete pests.

Natural pest control - Creating habitat for natural predators of pests.

Cultural pest control - Maintaining the site in a way to discourage pests. Includes Mechanical Pest Control, below.

Mechanical pest control – Removing pests by hand or machine.

Chemical pest control – The use of one or more pesticides.

Noxious weeds – Plants that are aggressive growing, multiply quickly and adversely affect desirable plants, or are somehow injurious to livestock or humans either by contact or when ingested.

Action Threshold – The number of pests in each area that are acceptable before action is taken.

Park Land – Land owned by the City of Lawrence that the committee has chosen to include in this preliminary IPM manual. The land chosen has excluded most right of way locations as well as the golf course.

Low traffic areas – Areas of parkland or right of way property that are less populated with a public presence on a day-to-day basis than other areas.

Seasonal Worker – Those individuals hired by PRC, MSO to work only during certain times of the year.