

### 3.1 Definition of Resource



Seattle has over 12,000 acres of managed landscaped area. These parks, gardens, streetscapes, library grounds, and greenbelts are important to the mental and physical health of the community. Collectively, they are a heritage of significant value dating back more than 115 years.

Seattle Parks and Recreation (SPR) adopted Integrated Pest Management (IPM) as its approach to prevent and suppress unacceptable, injurious levels of pests within its landscape assets. Damages can be aesthetic, economic, or injurious to public health and safety. Integrated Pest Management is defined as a decision-making process and set of actions to determine if pest suppression or control is needed, when it is needed, where it is needed and what strategy and mix of treatments may be needed, and how the strategies will be implemented.

The philosophy that guides Seattle Parks and Recreation's approach to pest management is the following:

*Careful consideration of all options available within the context of Integrated Pest Management (IPM) and budget realities, with suppression or control of injurious pests when needed, and with an emphasis on non-pesticide strategies whenever possible.*

### 3.2 Goal Statement

SPR's landscape assets—trees, shrubs, turf and natural areas—are all susceptible to threat from a variety of pests. No landscape either developed or natural is immune from pest attack. It is SPR's goal that through IPM, pests are managed in order to insure healthy plant communities, protect naturally occurring biological controls, protect the value of landscape assets, and protect, preserve and enhance the City's environment and natural ecosystems. SPR will provide parks and other public landscapes that are attractive, safe for visitors, and meet visitor expectations. In doing so, SPR will ensure an intact, public landscape legacy into the future.

SPR's IPM program includes all potential pest suppression and control strategies but focuses on non-pesticide strategies whenever possible. SPR will continue its aggressive IPM training and continuing education program for all staff that apply pesticides as part of their work. Staff will continue to meet the City's Pesticide reduction goals and emphasize pesticide reduction strategies through research and field-testing of alternative IPM strategies to minimize pesticide use. SPR will continue to aggressively reduce pesticide use specifically on golf courses and in greenhouses. Successful suppression and control options will be continually evaluated and implemented when feasible and as budget allows.

### 3.3 Definitions

**Integrated Pest Management (IPM)** – IPM is a decision-making process and set of actions to determine if, where, when and how pest problems will be managed. An IPM program includes all potential pest control strategies but focuses on nonpesticide controls whenever possible.

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**Material Safety Data Sheet (MSDS):** A MSDS is a document that contains information on the potential health effects of exposure to chemicals, or other potentially dangerous substances, and on safe working procedures when handling chemical products. It contains hazard evaluations on the use, storage, handling and emergency procedures related to that material. MSDSs are prepared by manufacturers of pesticide products and are required to be available to workers handling hazardous materials.

**Pest:** The word "pest" has been broadly defined in this document to include all "injurious" insect species, plant pathogens, noxious or invasive vegetation, vertebrate animals such as rodents and other structural pests or any other organism that creates an unhealthy environment for landscapes and structures OR an unacceptable health risk to the public.

### **Pest Control Options**

- **Cultural Control:** The use of sound horticultural maintenance practices to optimize plant health and to suppress insects, disease, and weed growth. Other cultural controls include site-appropriate design and the use of disease or low water use plants.
- **Mechanical control:** The use of manual methods that may include a variety of tools and equipment for the purpose of excluding, suppressing or eliminating pests.
- **Biological control:** The conservation of naturally occurring or purchase of biological control agents that act as predators or parasites of pest species, or the use of other beneficial organisms that improve plant health by enhancing soil quality.
- **Chemical control:** The application of various products such as pheromones, growth regulators, herbicides, insecticides or fungicides or other chemical compounds to a target pest or plant as a means of control.

**Pesticide:** Any licensed and registered product or material including herbicides, insecticides and fungicides, or biological agents applied to a target pest as a control measure.

**Pesticide reduction program:** The City of Seattle's program to reduce the use of pesticides. This program outlines overall policies and rules governing purchasing, storage, and use of pesticides and continuing strategies to reduce use.

**Threshold:** The term "threshold" refers to the point at which pest injury can no longer be tolerated without compromising the health, economic or aesthetic value of a plant, ecosystem or other assets of value, including human health. Once a threshold is being approached, some control measure may be necessary to suppress or control pest activity to acceptable levels.

**Tier Tables:** The City's inventory of pesticide products that have been screened and ranked according to criteria for environmental risk factors and worker safety concerns. The goal of the Tier Tables was to prioritize pesticide products for phase out or replacement with less hazardous alternatives.

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### 3.4 Policies and Guidelines

[15.58 RCW - the Washington Pesticide Control Act](#) and [17.21 RCW - the Washington Pesticide Application Act](#): Under this authority, the Compliance Branch of the Washington State Department of Agriculture (WSDA) enforces federal and state regulations relating to the storage, distribution, transportation, disposal, and use of pesticides.

**Chemical Use Policy:** This policy establishes a framework for evaluating potentially hazardous materials and prioritizing products for phase out and replacement with less hazardous alternatives.

<http://www.cityofseattle.net/environment/pesticides.htm>

Mayor's **Environmental Action Agenda (EAA)** presents the City's goals for protecting environmental quality, promoting environmental justice, and improving quality-of-life in Seattle for current and future generations. The agenda creates a framework for integrated City environmental action, robust tracking and reporting, coherent communication on environmental issues and links environmental stewardship, economic development, and social equity.



**Pesticide Reduction Program:** This program is an outgrowth of the Seattle Environmental Management Program (EMP) that was adopted to promote environmental stewardship in City operations. The two goals of the program are 1) to eliminate the use of the most potentially hazardous herbicides and insecticides and (2) to achieve a 30 percent reduction in overall pesticide use. The program outlines overall policies and rules governing purchasing, storage and use of pesticides, specific reduction goals and strategies to reduce use.

<http://www.cityofseattle.net/environment/pesticides.htm>

**SPR Childcare Facility IPM Policy:** This policy outlines notification procedures, communication protocol, and documentation of pesticide applications in or around licensed childcare centers in SPR facilities

**Salmon Protection Ruling:** The U.S. District Court ruling for the Western District of Washington, imposed on February, 2004, which imposed buffer zones restricting use of more than 30 pesticide active ingredients along streams and water bodies supporting threatened and endangered salmon. In addition, it provided for point of sale warnings that selected pesticides may harm salmon when used in urban areas.

[http://www.cityofseattle.net/environment/active\\_ingredients.pdf](http://www.cityofseattle.net/environment/active_ingredients.pdf)

**Sustainable Infrastructure Initiative (SII):** The SII a component of the Mayor's Environmental Action Agenda. It encourages application of innovative approaches that provide basic services in ways that are resource-efficient and environmentally responsible through a variety of incentive programs. Sustainable design encompasses the following broad topics:

- Efficient management of energy and water resources

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- Management of material resources and waste
- Restoration and protection of environmental quality
- Enhancement and protection of health and indoor environmental quality
- Reinforcement of natural systems
- Analysis of the life cycle costs and benefits of materials and methods

**Tri-County Pesticide Use Guidelines:** The purpose of this document is to offer consistent and constructive advice to jurisdictions in King, Snohomish, and Pierce counties that have IPM programs. It offers clarifying information on specific IPM practices in various landscape types such as waterways, developed landscapes, and natural areas.

<http://www.govlink.org/hazwaste/interagency/ipm/ipmtricityhome.html>

**WSDA’s Waste Pesticide Identification and Disposal Program**, in cooperation with local agencies, regularly collects and disposes of unusable agricultural and commercial grade pesticides from residents, farmers, business owners, and public agencies. This service is free of charge. <http://agr.wa.gov/PestFert/Pesticides/WastePesticide.htm>

### 3.5 IPM Program Components

The IPM process follows a continuum from design to maintenance. It begins with design decisions and is continues as appropriate management actions by staff directly responsible for maintenance.

IPM is integrated with all parks maintenance landscape management tasks. The program applies continuous monitoring of landscape asset health and when necessary uses one or a combination of cultural, physical, mechanical, biological, and chemical strategies to keep pest populations low enough to prevent damages, nuisance, or public health and safety hazards. An IPM program must consider all these factors while remaining economically feasible and environmentally friendly.

#### IPM Guidelines

- Park landscapes will be designed and managed to be healthy, functioning ecosystems, using plants that are pest resistant and minimizing disturbance of the naturally occurring biological controls present in the environment.
- SPR will practice IPM in all pest management situations
- Certain levels of pest problems or populations will be accepted within established thresholds. Those thresholds will vary with the individual pest and landscape setting.

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- Where resources are available and existing design themes will not be compromised, landscape modifications will be considered to reduce pest incidence and management.
- Pesticide applications will be posted for public information as per WSDA regulations AND label requirements. At a minimum, all pesticide applications will be posted for at least 24 hours OR a label-designated re-entry period after each application. When pesticides are used in confined environments such as greenhouses, the facility will be clearly posted "Closed to Entry" until the re-entry time period has elapsed.
- Pesticide reduction policy and rules will be strictly followed.
- All pesticide applications will be documented in writing and kept for 7 years

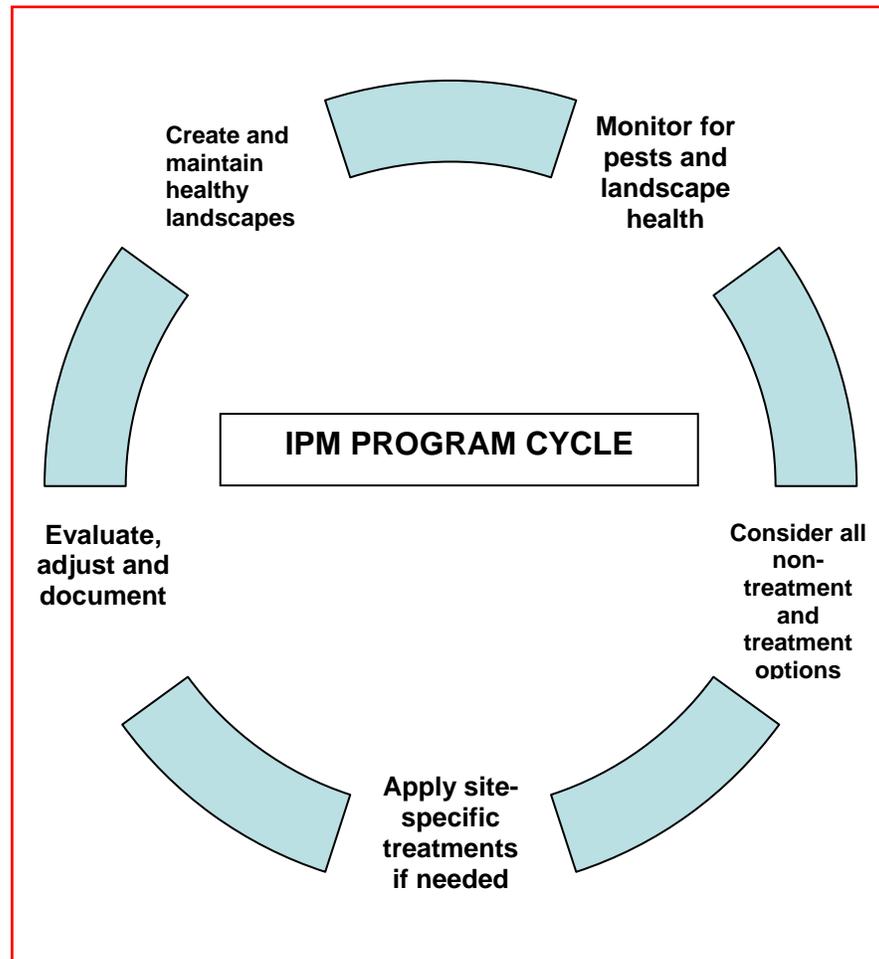
### **Treatment Considerations**

The following elements should be considered when selecting appropriate response to pests:

- Preservation of natural systems and long-term environmental health of the area
- Life stage and vulnerability of the pest
- Disruption to natural predators or natural control mechanisms
- Ability to produce a long-term sustainable reduction in the pest
- Ability to be carried out effectively
- Potential hazards to human health
- Toxicity to aquatic life, including all aspects of the amphibian, fish and especially salmon life cycle, habitat, and food sources.
- Mobility and persistence in the environment
- Impacts to non-target organisms
- Cost effectiveness

### 3.5.1 IPM Program Cycle

An IPM program is comprised of basic components that work well for all landscapes or facilities. SPR's IPM program has five primary components that work in a continuous cycle.



#### 1. Create and maintain healthy landscapes

- **Design for a healthy landscape:** A landscape should be designed to maximize intended uses of the land and to minimize potential pest problems. Design considers such plant health factors as site usage, soils, topography, hydrology and drainage, proximity to sensitive or critical areas and existing vegetation as well as known pest sensitivity.
- **Awareness of potential pest problems:** Certain plants have known pest problems. Likewise, certain cultural conditions or landscape situations can encourage the infestation of pests.



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- **Maintenance for Maximum Landscape Health:** A well- designed and maintained landscape dramatically reduces the need for pest control. Appropriate selection of plants, pruning, proper irrigation, applications of mulch and fertilizer, appropriate mowing techniques, and other practices all promote landscapes that resist pest pressures and support natural predators.
- **Minimize disturbance of naturally occurring biological controls:** Pests have natural predators and controls operating on them at all times. Disruption of these systems through poor maintenance practices can cause more or new pest problems to develop.

### 2. Monitor for pests and landscape health

- **Monitoring:** Routine maintenance includes continuous field monitoring to allow prompt identification of pests as they occur. Continuous monitoring is important to landscape health and to assess current pest population, extent of infestation, locations and life cycle. Monitoring also includes an assessment for established tolerance, injury, and possible actions levels.
- **Threshold:** Determine the level at which actions must be taken

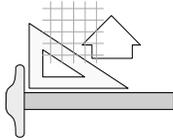


### 3. Consider all non treatment and treatment options

The implementation of SPR's IPM program will generally follow this selection rationale:

- **Cultural** methods of vegetation and pest control are preferred and will be employed first. Cultural methods include selective pruning, appropriate watering, fertilization, and plant selection.
- **Mechanical** means of vegetation and pest control will be employed next where feasible. Mechanical methods include hand removal of insects or diseased plants, and use of barriers and traps.
- **Biological** means of vegetation and pest control will be employed next where they exist and are practical and feasible. Biological controls include augmentation or inoculation of bacterial agents or insect predators, and conservation of naturally occurring predators.
- **Chemical controls, including pesticides:** Examples of non-pesticide chemical controls are insect pheromones, juvenile hormones and growth regulators, and plant growth regulators. **Pesticides** will ONLY be used when no other feasible method exists that will control the pest within the realities of the location, site conditions, budget and other relevant considerations. At the same time, it is recognized that pesticide use is a legitimate allowable element of an IPM program, albeit as a last priority. Pesticide products target specific pest and include herbicides, fungicides and insecticides.

### 4. Do Site-Specific Treatments, if needed



- **Implement treatment:** Utilize the full range of pest management options. Remember that it might be decided to ignore the pest altogether.
- **Treat only the areas where the problem occurs:** Response must consider protection of beneficial organisms and maintaining a healthy landscape. Use of pesticides will be limited to situations where other options are not likely to be successful within the context of available resources (see section 3.4 Pesticide Purchasing, Use and Storage Guidelines, page XX).
- **Strictly follow all pesticide label and MSDS information. Post the intended application site with WSDA approved signage for at least 24 hours or as the label requires prior to application.**

### 5. Evaluate, Adjust, and Document

- **Monitor:** Consider the following while monitoring the infestation:
  1. Did the pest population decline to acceptable levels?
  2. Was there a negative impact on pest predators or other non-target organisms?
  3. Do the host plants appear to be able to thrive following a successful treatment?



- **Adjust and extend program if needed:** Decide whether further treatment is needed for this episode. Forecast the future of this problem. Plan potential landscape or site modifications if it appears that the problem must be treated on an ongoing basis.



- **Document:** Keep information and/or data on non-treatment or treatment. **The Washington State Department of Agriculture (WSDA) requires that any pesticide application be documented on an approved form within 24 hours of the application. In addition, the City of Seattle requires that all pesticide use be entered into the Citywide Pesticide Application Database. The pesticide application records are to be kept for at least seven years.**



- **Share information:** Professional staff such as landscapes designers, maintenance managers, and public information specialists must know the degree to which pest management programs impact existing staff, maintenance budgets, and park assets. Through ongoing communication, the best long-term strategies can be evaluated for managing healthy, pest resistant landscapes.

### 3.6 Special IPM programs

**Pesticide reduction program:** This program is an outgrowth of the City of Seattle Environmental Management Program (EMP) that was adopted to promote environmental stewardship in City operations. The two main goals of the program are (1) to eliminate the use of the most potentially hazardous herbicides and insecticides and (2) to achieve a 30 percent reduction in overall pesticide use.

Certain park areas and specific features are considered “pesticide-free zones”. These include areas within 25 feet of play areas, picnic shelters, water features and the pesticide-free parks. Pesticide use within 25 feet of shorelines is prohibited and only certain uses related to invasive/noxious weed control will be considered. Check with the Resource Conservation coordinator for more information.



**Pesticide-Free Parks program (PFP):** Pesticide-free Parks (PFP) is a pesticide reduction program. The goal of the PFP is to provide geographically equitable public access to park facilities that are maintained without the use of pesticides and also helps the City understand how to maintain parks with less reliance on pesticides over the long term. Special rules regarding emergency or public health and safety use of pesticides and other references for the program are located in the OSE WebPages. <http://cityofseattle.net/environment>.

There are currently 22 PFPs, Located throughout the City.

<b>Alki Playground</b>	<b>Baker Park</b>
<b>Beer Sheva Park</b>	<b>Belvoir Place</b>
<b>Benefit Playground</b>	<b>Bradner Gardens Park</b>
<b>Day Street Park</b>	<b>Denny Blaine Lake Park</b>
<b>Elliot Bay Bikeway</b>	<b>Fairmont Playfield</b>
<b>Lake City Mini Park</b>	<b>Lakewood Playground</b>
<b>Magnolia Tidelands Park</b>	<b>Mayfair Park</b>
<b>Meridian Playground</b>	<b>Northgate Park</b>
<b>Regrade Park</b>	<b>South Lake Union Park</b>
<b>TT Minor Playground</b>	<b>Webster Playground</b>
<b>West Montlake Park</b>	<b>University Playground</b>

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**Child Care Facility IPM program:** Increasing concern about the impact of pesticides on children’s health has led to a state law dealing with pesticide use in schools and licensed day care centers. SPR has childcare facilities in community centers and in some public school buildings. Under this program, Parks must provide the childcare centers an annual notification of their pest control policies and methods, establish a system to notify families of children and employees of planned pesticide use, and post signs where pesticides have been applied. This law applies to both indoor and landscape pesticide applications to the child care facility and grounds. The resource conservation coordinator is responsible for overall coordination of this program.

The requirements include the following:

- Development of a specific Child Care Facility IPM policy
- Annual and/or upon enrollment IPM Policy notification to families and staff of child care centers
- 48-hour notification prior to every pesticide application, both indoors and to facility landscapes
- Post-application posting
- Annual pesticide application report
- Onsite pesticide storage and disposal documentation

### 3.7 Structural, Wildlife and Nuisance Pests

Certain structural pests may require an IPM strategy in order to control or suppress damages.

- **Canada Geese:** Canada geese populations have fluctuated over the last few years. In some facilities, primarily public beaches and natural grass athletic fields, their levels have caused increased public health and safety risks and landscape damages. Canada geese are protected under the Migratory Bird Treaty Act and any control measures are strictly regulated. Since 1989, SPR has collaborated with the United States Department of Agriculture – Wildlife Services (USDA-WS) in the implementation of regional IPM plans (Plan, addenda page #) for Canada Geese management involving local park agencies. The Resource Conservation Coordinator has the responsibility for Canada Geese management within Seattle Parks.
- **Feral Rabbits:** Over-populations of abandoned, feral rabbits can occur in parks, causing significant damage to landscapes and can also create public health and safety risks. A combined approach of public education to eliminate abandonment, reduction of supplemental feeding, and the removal and relocation of the animals are currently used to suppress populations
- **Mice:** Mice infestations of buildings are becoming an increasing human health problem because the potential of exposure to Hanta virus. Mice control is not currently a major pest control issue in SPR facilities, but increased control measures may be required in the future based on the spread of the virus and potential for serious outbreak. Spring traps are most commonly used for control of mice.
- **Rats:** Rats are often a major pest problem in many Seattle parks. Because they pose a human health risk, they must be controlled in many situations. Only applicators

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with an endorsement for Structural Pest Control may use rodenticides in Parks. The common method of control is baiting with approved rat bait. Rat bait can ONLY be used in approved bait stations, in locations where people or animals cannot access it.

- **Yellow Jackets, Hornets, and Wasps:** These insects often require control in parks where their location poses a public health and safety risk. Control is typically through use of an approved insecticide from the Tier tables. Only individual nests are treated.

### 3.8 IPM Program Authority

The following city departments and staff are responsible for overall IPM policy development, implementation, documentation, and regulatory compliance within Seattle Parks.

- The **Office of Sustainability and Environmental (OSE)** sets overall policy for pesticide use in the City of Seattle. OSE's authority includes determining whether particular pesticide products will be included in the City of Seattle list of acceptable products. The OSE will normally consult with the departments that have land management responsibilities before making these recommendations.
- The **Resource Conservation Coordinator (RCC)** is the SPR liaison to OSE and has primary responsibility for research and development of departmental pesticide policy, and procedures. The RCC is responsible for IPM regulatory and policy compliance, monitoring pesticide use and staff continuing education and training programs.
- The **Horticulture Manager, Park Resource Managers, the Golf Director, the Parks Horticulturist, Park Resource Crew Chiefs, and Golf Course Director** are responsible for applying City and SPR pesticide policies and procedures within their areas of control.
- The **Senior Gardeners, Golf Course Superintendents, or Senior Golf Technicians** monitor and determine the most appropriate suppression and control measure for landscape pest situations, including use of the most appropriate pesticide product from the Tier tables. They are responsible for overall IPM program development, implementation, and documentation within their district.
- The **Hazardous Waste Coordinator (HWC)** coordinates issues related to hazardous waste. These issues include safe storage and handling of pesticides, removal of outdated pesticides from SPR inventory, hazardous spill response, and related training. The HWC inventories all pesticide products that could become hazardous waste. The HWC maintains a computerized hazardous materials inventory, including pesticides.
- The SPR's **Safety and Health Specialist** will work with staff to ensure that any required personal protective equipment (PPE) is available and properly fitted for use by all staff applying pesticides.

### 3.9 IPM Continuing Education

- The **City of Seattle Pesticide Recertification Training Committee** is responsible for coordinating the mandatory annual recertification and continuing education training for all licensed City of Seattle Public Operator pesticide applicators.
- The **Resource Conservation Coordinator** is the SPR liaison to OSE and has primary responsibility for IPM training programs.

### 3.10 Pesticide Purchasing, Use, and Storage

Every pesticide applicator has a personal responsibility to themselves, other staff, and the public to follow safe work practices when using or storing pesticides. Licensed pesticide applicators shall be aware of and strictly follow all policies and regulations related to pesticide use.

#### 3.10.1 Purchasing and Screening

Pesticides approved for use in the City are included in the Tier Tables. These products are the **ONLY** pesticides that can be used on city properties. All new products **MUST** be screened and approved before being added to the Tier Tables. If staff wishes to add a new product to the Tier Tables, the following process must occur:

- 1) Forward the product label and MSDS to the Resource Conservation Coordinator and request an assessment of the product
- 2) Resource Conservation Coordinator will analyze the product and compare it to other products in the Tier tables.
- 3) If the product meets departmental and OSE approval and funding is approved, the product will be screened and added to the Tier tables

As part of SPR's Hazardous Waste Management Program, pesticides will be purchased in minimal amounts to avoid stockpiling and long-term storage. Plan for the current season and purchase the smallest amount of any pesticide needed.

#### 3.10.2 Storage of Pesticides and Application Equipment

The operator of a pesticide storage facility shall inspect and maintain storage containers, appurtenances, secondary containment and operational area containment to minimize the risk of a pesticide release. The inspection shall include a visual observation for any evidence of leaks, spills, cracks, solar decay or wear. This inspection shall occur once per month during use seasons and includes the following tasks:

1. Store all pesticides in a WSDA-approved storage. Label storage area with an NFPA-coded sign to protect Fire Department or Hazmat personnel in case of emergency.
2. Store all pesticides in a manner that minimizes worker exposure and potential for contamination of surface and ground water.

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3. Use secondary containment where appropriate. All secondary and operational area containment shall be maintained free of debris and foreign matter.
4. All spray equipment shall be maintained in proper working order and stored in an OSHA-approved site.
5. All protective gear (masks, filters, rain gear) will be stored separately from pesticides to avoid any possible contamination.
6. Store pesticides separately from other materials such as fertilizers.

**Any pesticides in inventory that are no longer needed for use will be disposed of through SPR hazardous materials disposal practices. Call the SPR warehouse supervisor for guidelines for disposing of pesticides or other hazardous materials.**

### 3.11 Pesticide Use Guidelines

- All reasonable non-pesticide pest control options will be considered first before resorting to the use of pesticides.
- SPR will not perform prophylactic or calendar-based pesticide applications.
- Pesticides will not be used to control plants that are in fruit.
- Only pesticides on the City's approved Tier tables will be purchased and used in SPR facilities.
- As required by law, always have the correct label and Material Safety Data Sheet (MSDS) on hand for all pesticides at your site.
- Always read the label and MSDS of the pesticide before using it. Strictly follow all label and MSDS directions for mixing and application of the product.
- Always check the label and MSDS for environmental impacts and concerns, the type of personal and environmental protection needed and the recommended re-entry time before the pesticide is applied, if applicable.
- All applicators will be familiar with all Pesticide reduction guidelines, including Tier table pesticide rankings. Tier 1 products can be used ONLY if an exception has been approved.
- Pesticides will not be used inside of or within 50 feet of a play area, picnic shelters, picnic table groupings or wading pools/water play features.
- In parks with licensed childcare facilities, a 48-hour pre-notification is required for both in indoor and outdoor pesticide applications. (See Childcare IPM Policy, page XX).

### 3.11.1 Pesticide Application Guidelines

- Each applicator must be aware of any special regulations that apply to the site where the application is planned.
- Each applicator must notify any registered pesticide-sensitive individuals prior to a pesticide application to a landscape or right-of-way that is adjacent to their principal place of residence.
- When pesticides are applied, only the exact location where the pest problem is occurring will be treated.
- The application of pesticide products will be timed to minimize public contact, minimize worker exposure, and potential for contamination of surface and ground water.
- All sites where pesticides have been applied will be posted per City of Seattle Standard signage and Washington State Department of Agriculture (WSDA) regulations. Signs will be posted for 24 hours or until re-entry is permitted as per label requirements.
- As required by the WSDA, all applications of pesticides will be recorded within 24 hours of application on an approved form. In addition, all pesticide applications will be entered into the City's pesticide application database. This database is administered by SPR.
- When pesticides are used in confined environments such as greenhouses, the facility will be clearly posted "Closed to Entry" until the re-entry time period has elapsed.

#### Pesticide Applications near Watercourses & Aquatic Habitats

**Under no circumstances shall any applicator apply pesticides to streams, water bodies, or to aquatic plants without approval by the Resource Conservation Coordinator and OSE. Such applications are regulated by the Department of Ecology and WSDA and require special permitting under very specific conditions.**

Whenever pesticide products are applied adjacent to or within 50 feet of watercourses, great care will be taken to ensure product does not migrate into the watercourse either through drift or by overland flow. Weather conditions must be monitored carefully to avoid applying a pesticide near a watercourse immediately before heavy rains.

Pesticide mobility, leaching potential, soil conditions and site topography must be carefully studied to determine either the appropriate timing of a pesticide application **or whether a pesticide should even be applied at the site.** In general, the use of pesticide products in close proximity to a watercourse shall be discouraged in favor of an alternative control method.

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All applicators will follow specific guidelines under special laws and regulations regarding applications near salmon bearing waters. The statewide ruling referred to as the “**Salmon Protection Ruling**”, established specific buffer zones for certain pesticides (see Policies and Guidelines, Page 3-3, and Online References, page 3-18)

### 3.11.2 Pesticide Application Equipment

Pesticide application for all listed areas will be carried out by hand with directed, low-volume, single-wand sprayers, wiping, daubing and painting equipment, injection systems, or drop spreaders. Typically, applications are done with backpack sprayers, but may also include fuel-powered sprayers with larger fill tanks. Both types of sprayers use the same kind of hand application method. These methods of delivery result in low-volume applications at low nozzle pressures. This practice minimizes the formation of fine mists that can result in pesticide drift. These practices help ensure that the pesticide applied will reach only its intended target. Boom type sprayers are only to be used in golf course applications and for special situations.

### 3.11.3 Personal Protective Equipment (PPE)

The table on the following page shows the personal protective equipment required by City, state and federal regulations for pesticide use.

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Personal Protective Equipment (PPE) Guide for Using Pesticides			
Form of Pesticide	LABEL SIGNAL WORD		
	Caution	Warning	Danger
Dry	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> <li>• Wide-brimmed hat</li> <li>• Gloves</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> <li>• Hat</li> <li>• Gloves</li> <li>• Cartridge or canister respirator if dusts in air or if label precautionary statement says "Poisonous or fatal if inhaled"</li> </ul>
Liquid	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> <li>• Wide-brimmed hat</li> <li>• Gloves</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> <li>• Wide-brimmed hat</li> <li>• Rubber gloves</li> <li>• Goggles if required by label precautionary statement</li> <li>• Cartridge or canister respirator if label precautionary statement says "Do not breathe vapors or spray mist" or "Poisonous if inhaled"</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Rubber boots</li> <li>• Wide-brimmed hat</li> <li>• Rubber gloves or face shield</li> <li>• Canister respirator if label precautionary statement says "Do not breathe vapors or spray mists," or "Poisonous if inhaled"</li> </ul>
Liquid when mixing	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes and socks</li> <li>• Wide-brimmed hat</li> <li>• Gloves</li> <li>• Rubber apron</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Shoes &amp; socks</li> <li>• Wide-brimmed hat</li> <li>• Rubber gloves</li> <li>• Goggles or face shield;</li> <li>• Rubber apron</li> <li>• Respirator if label precautionary statement says: "Do not breathe vapors or spray mist" or "Poisonous (or fatal or harmful) if inhaled"</li> </ul>	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Rubber boots</li> <li>• Wide-brimmed hat</li> <li>• Rubber gloves</li> <li>• Goggles</li> <li>• Rubber apron</li> <li>• Canister respirator</li> </ul>
Liquid (prolonged exposure to spray, or application in enclosed area)	<ul style="list-style-type: none"> <li>• Long-legged pants</li> <li>• Long-sleeved shirt</li> <li>• Boots</li> <li>• Rubber gloves</li> <li>• Waterproof wide-brimmed hat</li> </ul>	<ul style="list-style-type: none"> <li>• Water-repellent long-legged pants &amp; long-sleeved shirt</li> <li>• Rubber boots</li> <li>• Rubber gloves</li> <li>• Rubber apron</li> <li>• Waterproof wide-brimmed hat</li> <li>• Face shield</li> <li>• Cartridge or canister respirator.</li> </ul>	<ul style="list-style-type: none"> <li>• Waterproof suit</li> <li>• Rubber boots</li> <li>• Rubber gloves</li> <li>• Waterproof hood or wide brimmed hat</li> <li>• Face shield</li> <li>• Canister respirator</li> </ul>

### 3.12 Specialized IPM Programs

Each landscape asset has pest control issues unique to it or common to other landscapes yet requiring different control measures. For these reasons, the pest control measures specific to each landscape are indexed in this section. Please refer to the pages in BMP chapters listed for more information about individual landscape asset pest management programs.

**Greenhouse Operations, page 2-7**

**Natural Areas, page 5-16**

**Nursery Operations, page 6-7**

**Plant Beds, page 7-19**

**Trees, page 8-17**

**Turf, page 9-11**

### 3.13 Training



Integrated Pest Management Overview

Integrated Pest Management for New  
Applicators - Annual Training

License Recertification – Annual Training

Advanced training in IPM specialty

### 3.14 Appendices Lists for Integrated Pest Management

#### HARD COPY REFERENCES

1. City of Seattle Pesticide Signage Standard and Specifications

#### ONLINE REFERENCES

1. [15.58 RCW - the Washington Pesticide Control Act](#) and [17.21 RCW - the Washington Pesticide Application Act](#): Under this authority, the Compliance Branch enforces federal and state regulations relating to the storage, distribution, transportation, disposal and use of pesticides.

### 3.14 Appendices Lists for Integrated Pest Management

#### ONLINE REFERENCES, continued

2. **Chemical Use Policy:** This policy establishes a framework for evaluating potentially hazardous materials and prioritizing products for phase out and replacement with less hazardous alternatives.  
<http://www.cityofseattle.net/environment/pesticides.htm>
3. City of Seattle Pesticide Application Signage Standard and Specifications <http://www.cityofseattle.net/environment/pesticides.htm>
4. **Pesticide reduction program:** This program is an outgrowth of the Seattle Environmental Management Program (EMP) which was adopted to promote environmental stewardship in City operations. The 2 goals of the program are 1) to eliminate the use of the most potentially hazardous herbicides and insecticides and (2) to achieve a 30 percent reduction in overall pesticide use. The program outlines overall policies and rules governing purchasing, storage and use of pesticides, specific reduction goals and strategies to reduce use.  
<http://www.cityofseattle.net/environment/pesticides.htm>
5. **SPR Standards and Specifications:** All mandated SPR construction standards that apply to landscape projects.  
<http://www.cityofseattle.net/parks/projects/standards/specs.asp>
6. **Salmon Protection Ruling:** The U.S. District Court ruling for the Western District of Washington, imposed on February, 2004, which imposed buffer zones restricting use of more than 30 pesticide active ingredients along streams and water bodies supporting threatened and endangered salmon. In addition, it provided for point of sale warnings that selected pesticides may harm salmon when used in urban areas.  
[http://www.cityofseattle.net/environment/active\\_ingredients.pdf](http://www.cityofseattle.net/environment/active_ingredients.pdf)
7. **Tri County Pesticide Use Guidelines:** The purpose of this document is to offer consistent and constructive advice to jurisdictions in King, Snohomish and Pierce counties that have IPM programs. It offers clarifying information on specific IPM practices in various landscape types such as waterways, developed landscapes and natural areas.  
<http://www.govlink.org/hazwaste/interagency/ipm/ipmtricityhome.html>