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# THPRD Integrated Pest Management Program

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## Mission Statement

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The mission of the Tualatin Hills Park & Recreation District is to provide high-quality park and recreation facilities, programs, services, and natural areas that meet the needs of the diverse communities it serves.

The Tualatin Hills Park & Recreation District (THPRD) endorses the principles of Integrated Pest Management (IPM). The THPRD IPM Program uses multi-faceted pest control strategies that are safe, cost-effective, sustainable, and minimize the negative impact on the environment and human health.

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## Integrated Pest Management

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Integrated Pest Management is one of the major strategies used by THPRD in the maintenance of park, facilities. Although there are numerous definitions of IPM, the following definition extracted from the [Pacific Northwest Insect Management Handbook](#).

**“Integrated pest management (IPM) is an ecologically-based pest control strategy that relies heavily on natural mortality factors such as natural enemies and weather and seeks out control tactics that disrupt these factors as little as possible. IPM uses pesticides, but only after systematic monitoring of pest populations and natural control factors indicate a need. Ideally, an integrated pest management program considers all available pest control actions—including no action—and evaluates the potential interaction among various control tactics, cultural practices, weather, other pests, and the crop to be protected.”**

Examples of the THPRD IPM Program include:

- Mowing high grass and brush to reduce weed seed crops in rough areas.
- Pruning of trees and shrubs to increase air circulation and reduce susceptibility to disease and insect problems.
- Appropriate fertilizing to encourage plant health and resistance to pests (i.e., weeds, insects, and disease).
- Using plants with natural resistance to pests.
- Combining turf aeration and over-seeding along with any application of broadleaf weed control to eliminate the cause of the problem and, therefore, the need for repeated applications.
- Manual cultivation of weeds in shrub & landscape beds.
- Prudent use of pesticides when necessary and after which other options have been explored.

Integrated Pest Management principles will be employed in all landscape management decision-making. Control of unwanted vegetation, diseases, and pests will follow the IPM decision-making rationale.

- Proper planning and management decisions begin the IPM process.
- Cultural methods of vegetation and pest control are preferred and will be employed next.
- Mechanical means of vegetation and pest control are next in line of preference and will be utilized where feasible.
- Biological methods of vegetation and pest control are to be considered before chemical means, where they are feasible.
- Botanical and synthetic pesticides will be used only when no other feasible methods exist.

Key elements of an IPM Program are information gathering and informed decision-making. THPRD personnel are skilled in identifying and evaluating pest problems. When pest problems occur that are unusual or beyond the scope of in-house experts, contracts are made with private consultants or advice is obtained from other agencies, such as the State Universities, Oregon State Department of Agriculture, or Oregon State University Extension Service experts. The Public Pesticide Applicator License re-certification courses reinforce employee skills and provide the latest information concerning laws and safety, identification of pest weeds, diseases, and insects, and appropriate control methods using the IPM approach.

Pesticide is a general term for any substance used to control pests. Pests include, but are not limited to, weeds, insects, diseases, disease-carrying organisms, and wildlife. To control these pests, THPRD personnel select the best methods available. When it is necessary to use chemical controls, THPRD feels it can avoid or minimize risks by careful selection and application of the control measures.

THPRD has found that pesticides have been helpful tools in ensuring a high standard of performance when used in conjunction with other control methods. THPRD employees are required to comply with all pesticide label directions, safety laws, and local, state, and federal pesticide regulations.

Sustainable management practices attempt to eliminate waste in any program. THPRD employees avoid generating pesticide waste by use of several strategies. Advanced planning, purchasing the amount needed, and mixing only the precise amount needed to complete the job can usually avoid elimination of waste material. When waste material is generated, THPRD adheres to the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) regulations for disposal.

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## Approved Pest Control Strategies

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This is a short list of examples of possible control strategies among the many available. Prevention through policy, planning, and maintenance practices is the first priority. Next in priority are controls through cultural and mechanical practices, and trapping. Applications of biological controls and chemical products are to be considered last.

### Prevention

- **Acceptance of natural settings and natural appearances must be considered:** Where it is appropriate for a given park site, the landscape can be left alone or can receive a reduced level of care. This can serve the dual purpose of reducing or eliminating pest control measures and reducing maintenance costs.
- **Prioritization of park areas for control measures:** Different park areas have differing standards of acceptable care and appearance.
- **Establishment of thresholds for action and the level of tolerance for different pests:** These thresholds vary according to plant, pest, and site. Determination of action thresholds will be made on a case-by-case basis or as described in THPRD Best Management Practices.

### Design and Plant Selection

- **Use of disease or pest-resistant/tolerant plant species,** which may include native varieties.
- **Replacement or removal of pest-susceptible plants.**
- **Elimination or modification of problematic areas.**
- **Proper and adequate spacing of plant material** to reduce the incidence of insect and disease problems.
- **Maintenance of high species diversity** and elimination of monocultures in plantings.
- **Elimination of alternate hosts for diseases.**

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## Control Through IPM Techniques

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### Cultural Practices

- Knowledge of culture of individual plant genera or species to provide the proper conditions for optimum plant health and pest-resistance. Pest biology must be considered.
- Adequate site preparation before plants are installed. This can include soil amendments, pruning of surrounding vegetation, soil grade adjustments, drainage improvements, and installation of irrigation systems.
- Grafting of disease-tolerant or resistant rootstock to susceptible scion wood.
- Proper timing and use of water. Elimination of drought and flood stress to promote plant health.
- Proper timing and use of fertilization to eliminate over- and under-fertilization. The effects of over-fertilization on the target plant as well as run-off to surface and groundwater must be considered.
- Use of cover crops to improve soil structure and reduce soil erosion.
- Rotation of crops or planting of resistant plant species as replacements for removed plants.
- Aeration and/or over-seeding of turf and compacted areas.
- Raking and debris removal to remove possible contaminants.
- Using proper sanitation to prevent spread of pests.
- Proper timing of mowing to reduce and/or avoid weed seed production.
- Closing entry points into buildings for wildlife.

### Mechanical Controls

- Removal of diseased, damaged, or dead wood from the plant.
- Pruning and plant removal to promote air circulation and light penetration for healthier plant growth.
- Fan placement for greenhouse air circulation.
- Mulching against weed colonization in landscaping and nursery areas.
- Mechanical edging of turf.
- Removal of spent flowers on shrubs and annuals.
- Hand clearing in undeveloped areas.
- Hand weeding in shrub beds.
- Tilling to remove large areas of weed seed crops.
- Mowing of rough areas for vegetation control.

### **Non-chemical Controls**

- Traps: yellow sticky boards, traps for mammalian pests.
- Biological controls: naturally occurring and introduced insect or disease parasitoids, predators, and microbial products.

### **Chemical Controls**

- Pheromone traps.
- Petroleum-based horticultural oils.
- Insecticidal soaps.
- Botanically and bacterially derived pesticides (some disease control products contain fungi as biocontrol agents).
- Artificially synthesized pesticides.

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## Criteria for Choosing A Pest Control Method

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All personnel responsible for pest control should consider all of these and any other factors that are relevant to the selection of a pesticide. Pesticides shall be chosen from the Approved Pesticides List ([Appendix I](#)).

### ***Possible Health Effects and Toxicity***

Both acute and chronic to the:

- Applicator.
- Public.
- Target pest.
- Beneficial and non-target organisms including insects, birds, aquatic organisms, and mammals.
- Non-target plants.
- Surrounding environment (possible bioaccumulation should be considered).

### ***Costs***

Both short and long term as it relates to:

- Material costs.
- Application costs.
- Length of control.
- Environmental costs.

### ***Physical Characteristics of the Product***

- Residual effect and length, decomposition rates and breakdown products.
- Ability to be tank-mixed with other products.
- Volatility at different temperatures.
- Product and package size and form.
- Leachability: Solubility, surface and soil bonding capability of the pesticide.
- Flammability of the product.
- Ease of cleaning equipment after use.



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## Special Considerations

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For each situation, consider:

- The kind of use a given area might receive. Consider who will enter the area treated and what kind of activities will take place.
- Application equipment available and the method of delivery.
- Current and anticipated weather conditions such as wind, rain, humidity, and temperature. The applicator should be aware of any existing or forecast temperature inversions.
- Site conditions such as soil type, slope, grade, drainage patterns, and the presence of open or seasonal water.
- Previous pesticide applications to the site and the interval between treatments. The applicator should consider the maximum amount of pesticide allowed by the label for a given treatment site.
- Development of pesticide resistance by a target pest. Proper rotation of chemicals, such as alternating pesticide products, can minimize the risk of resistance in certain cases.
- Residual buildup of pesticides in soil, water, or target site. The cumulative effect of repeated applications should be considered.
- Positive and negative synergistic effects of combining pesticides. Compatibility of different pesticides may be of concern, both regarding their physical traits, as well as their effects on the target pest or beneficial organisms.

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## Licensing, Certification, and Continuing Education of Pest Control Personnel

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## Procedure #1

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### BACKGROUND

This procedure defines the education and licensing requirements for THPRD personnel who are applying pesticides or supervising others applying pesticides. THPRD desires to remain current in the practices of the trade. Continuing education helps to keep personnel up to date on pest control methods.

THPRD requires that pesticides be applied by a licensed pesticide applicator. In order to maintain licensing, the applicator must acquire a minimum of 40 hours of accredited supplementary education over a five-year period or pass the follow up testing. No more than 15 hours may be accumulated per year. THPRD makes re-certification training opportunities available to its employees each year. THPRD desires to maintain the highest standards for professional conduct and will continue to equal or exceed the minimum requirements of the State.

### PROCEDURE

All THPRD personnel handling or applying pesticides shall be licensed applicators. Any applicator holding an apprentice license shall be immediately supervised. THPRD will continue to provide supplementary education opportunities to maintain licensing. All pesticide applicators are expected to participate in these training opportunities to enhance and maintain their expertise in pest management. Ultimate responsibility for maintaining a valid license lies with the applicator.

THPRD will keep pesticide applicators informed of, and will pay for, approved supplemental education and licensing fees to meet continued certification and licensing requirements.

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## Use of Protective Equipment and Clothing

## Procedure #2

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### BACKGROUND

This procedure outlines the requirements for the use of protective equipment and clothing by District personnel when applying pesticides. Specific information on protective equipment is available on the product label and on the Safety Data Sheets (SDS). The park district's Safety Manual policy on personal protective equipment should be reviewed for requirements beyond that stated on the product label and SDS.

### PROCEDURE

Applicators must wear Personal Protective Equipment (PPE) specified by the pesticide label(s) and the SDS. In addition, THPRD requires all applicators to wear chemical resistant gloves and protective eyewear during application, even if not otherwise required by the label(s) or SDS. Examples of PPE include:

- Long-sleeved shirt.
- Long pants.
- Shoes and socks and/or other appropriate footwear as listed on the label.
- Gloves: Hand coverings listed on the label. Gloves or glove lining made of cotton, leather, or other absorbent materials must not be worn during the handling or application of pesticides.
- Protective eyewear: Chemical resistant goggles, face shields, or safety glasses with front brow and temple protection.
- Respirator: A device that will protect the respiratory system. The respirator will be appropriate for the pesticide product. Respirators must be individually fitted per the THPRD Safety Manual, Respiratory Protection.

The clothing and personal protective equipment shall be provided by THPRD. Time will be made available to wash up before lunch and at the end of the day. The applicator is responsible for cleaning, storing, and maintaining spray clothing and equipment in a safe and useful manner.

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## Pesticide Application and Record Keeping

## Procedure #3

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### BACKGROUND

This procedure outlines methods for record keeping related to pesticide application by THPRD personnel. Federal law requires that personnel record the details of pesticide applications and keep these records for no less than three years. These records must be stored in a central location and be available for review.

### PROCEDURE

Federal law requires that records of all pesticide applications performed by THPRD personnel (see [Appendix III](#)) for three years. A master file of copies of these records shall be kept at the Maintenance Operations Office and overseen by the appropriate north or south Park Maintenance Supervisor. Each operating unit shall keep records of applications made by their own personnel. Duplicate copies shall be sent to the Maintenance Supervisor to be entered into the database.

Pesticide application records must include at least the following information:

- Name of applicator
- License number of applicator
- Date of application
- Time of application
- Location of application, including the following:
  - Park name
  - Specific location(s) within the park
  - Estimate of gross square footage treated
  - Estimate of linear feet of waterway shoreline treated (only one side of the stream, even if both sides treated)
- Weather information, including the following:
  - Estimate of wind speed
  - Estimate of temperature
  - Estimate of cloud cover
- Product brand name and distributor or manufacturer
- EPA registration number
- Mixture rate
- Amount of diluted product used
- Target pest(s), including, where possible, common name of weed insect or plant species

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## Pesticides Approved for Use by Tualatin Hills Park & Recreation District Personnel

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## Procedure #4

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### BACKGROUND

This procedure defines the process of selection of pesticides that are approved for use on THPRD property. Federal laws require strict adherence to all label requirements concerning the safe and effective use of pesticides.

THPRD experience has shown that it is more desirable to have a specialized selection of products that target specific pests, rather than a smaller number of general-purpose pesticides. This acts to confine the effects of the control to the target pest only. It reduces the number of resistant pests that may arise from continued use of a small number of products. It leads to an overall reduction of pesticide usage required.

To introduce new products to the approved list, the Application for Pesticide Use form ([Appendix II](#)) is submitted to the Pesticide Review Committee for consideration.

Product selection should consider the safety risks associated with each product prior to purchase and use. For example, products with a signal word “Caution” should be selected before those with the signal words “Warning” or “Danger.” Other considerations may include, but are not limited to, persistence in the environment after application, volatility of the product, and effects on highly sensitive non-target plants nearby the application area.

For reference, consult the park district’s Safety Manual policy on Prevention and Control of Workplace Hazards. In addition, refer to the park district’s Safety Manual policy on Hazard Communication (Right To Know) when considering storage of pesticides and record keeping relative to their storage.

Due to storage and inventory considerations, the Pesticide Review Committee may approve the use of pesticides that have been removed from the approved list and placed on the “Use Up And Do Not Restock List” section of [Appendix I](#) until the product has been used up. Licensed applicators will use these products legally and in a timely manner.

### PROCEDURE

THPRD shall maintain a list of pesticides (see [Appendix I](#)) approved for use by District personnel on property or rights-of-way managed by the park district. The list shall be used in choosing the proper pesticide for an area. The least toxic, cost-effective pesticide from the approved lists shall be used. The lists shall be reviewed no less than yearly to keep them current. Any pesticides that are proposed for addition or deletion from the list shall be approved by a review body, the Pesticide Review Committee, consisting of at least three of the following persons: North or south Park Maintenance Supervisor or designee,

the Safety Supervisor, and a representative from the department making the request (e.g. natural resources, park maintenance, building maintenance, and athletic maintenance.)

The Pesticide Review Committee shall be initiated by the appropriate north or south Park Maintenance Supervisor and at least once each year. The committee shall have authority to approve requests for new pesticide additions, deletions, and pesticide approvals for special and unusual pest problems. If a pesticide is under the EPA's Special Review process (see U.S. Environmental Protection Agency, Reregistration and Other Review Programs Predating Pesticide Registration Review) for registration, the committee will seek alternatives. A pesticide deleted from the general approved list but placed on the "Use Up and Do Not Restock List" may be approved for use until current supplies are exhausted or unless otherwise noted. All federal and state laws governing the use of pesticides will be upheld. Deletion of a pesticide due to legal banning will be upheld without prior approval per the schedule set by law.

Applicators must make sure that any pesticides used are on the approved list. Special consideration is to be taken when applications covered under the [Waterways Pest Management Procedure #19](#) take place. Pesticides allowed for those purposes are clearly defined within that procedure.

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## Storage of Pesticides

## Procedure #5

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### BACKGROUND

This procedure defines the method and procedure for storing pesticide materials. Several agencies are involved in regulating certain aspects of pesticide storage. No agency has comprehensive authority. Agencies involved include, but are not limited to, State of Oregon Department of Agriculture, Oregon Department of Environmental Quality, U.S. Environmental Protection Agency, Oregon State Fire Marshall, and Tualatin Valley Fire & Rescue.

Consult the park district's Safety Manual policy on Prevention and Control of Workplace Hazards for information regarding proper risk management when considering storage of pesticides. In addition, refer to the park district's Safety Manual policy on Hazard Communication (Right to Know) when considering storage of pesticides and record keeping relative to their storage.

### PROCEDURE

Pesticides or pesticide containers shall be kept in secure and safe locations in accordance with existing laws. They shall be secured in and, if possible, in a heated, well-ventilated area. Areas used for storage shall be labeled.

Pesticides shall be safeguarded from environmental damage (for example, including, but not limited to freezing, vaporizing, photodecomposition, or exposure to excess moisture). All pesticides in stock shall be inventoried annually and, if necessary, rotated on the shelf to assure that the oldest dated items are used first.

THPRD licensed applicator(s) will clean each pesticide storage facility. The frequency of cleaning will be directed by supervisory personnel but will not be less than once per year.

THPRD licensed applicator(s) will inventory each pesticide storage facility. The frequency of inventory will be monitored by supervisory personnel but will not be less than once per year.

Pesticides being transported shall be appropriately and safely secured in the vehicle. An appropriate spill kit must be immediately available for the materials being transported.

**Pesticides shall not be transported in passenger cabs of vehicles.**

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## Use of Remaining Pesticide Solutions and Rinses

## Procedure #6

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### BACKGROUND

This procedure outlines methods for use of remaining pesticide solutions and rinses in a legal and safe manner. Applicable laws require that all pesticide solutions and rinses be applied to target areas according to label directions. These solutions and rinses may also be disposed of at an authorized pesticide disposal site.

Consult the park district's Safety Manual policy on Hazard Communication (Right to Know) when considering disposal of pesticides and empty pesticide containers.

### PROCEDURE

It is the practice of THPRD to conduct our pesticide operations so that disposal of material is not necessary. Pesticide solutions and rinses are applied according to the label and to legal target areas so there are no remaining pesticides. This shall be accomplished by accurately gauging the amount of pesticide needed for the job. THPRD promotes the use of advance planning to minimize the number of times it is necessary to switch pesticides in spray equipment. In order to reduce the amount of excess rinsate, it is the practice of THPRD to rinse equipment only at the end of the spray cycle or when changing to pesticides that are incompatible with those in the tank.

### PROCEDURES

Following are some considerations to make before starting to spray to ensure the proper amount of pesticide is mixed.

#### Advance considerations:

- Weather conditions and predictions.
- Acreage / square footage of the job site.
- Calendar: special events, mowing, irrigation, etc.
- Type and size of the equipment appropriate to do the job.
- Mix only enough product to perform the job.



**Use the following rinse process:**

1. Read the pesticide label. The following should not conflict with label information or state or federal regulations. Contact your immediate supervisor if you see a conflict or have questions.
2. Wear protective clothing, as listed on the label or on the Safety Data Sheets when handling pesticides, pesticide containers or pesticide equipment.
3. Fill the spray equipment approximately  $\frac{1}{4}$  full with clean water. Add a neutralizing agent if the pesticide label recommends one. Shake or agitate so that all inside surfaces are washed. If possible, use the spray hose to rinse the inside surface of the tank. These procedures should coincide with all label regulations.
4. Spray the rinse water out of the spray equipment onto an approved target area. Rinse water should be run through all hoses, booms, etc. Filters should be cleaned. Because of the dilute nature of the pesticide in the rinse water, a coarse spray can be used and is recommended to save time. Do not “pond” or saturate the soil.
5. If the tank is to be stored, repeat steps 3 and 4 above, without a neutralizing agent.

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## Disposal of Empty Pesticide Containers Unusable Pesticides, and Equipment

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## Procedure #7

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### BACKGROUND

This procedure defines the methods and procedures for disposing of pesticide containers and unusable pesticides or those pesticides whose registrations have been totally or partially suspended.

THPRD considers proper disposal of pesticides and pesticide containers to be of the utmost importance to the safety and well-being of employees and the public.

Several governmental agencies regulate pesticide disposal. No single agency has comprehensive authority. Agencies involved may include, but are not limited to, the Oregon State Department of Agriculture, Oregon Department of Environmental Quality, U.S. Environmental Protection Agency, and state and federal Occupational Safety and Health Administration (OSHA) programs.

Consult the park district's Safety Manual policy on Hazard Communication (Right To Know) when considering disposal of pesticides and empty pesticide containers.

### PROCEDURE

THPRD shall dispose of pesticides and empty pesticide containers in accordance with all State and Federal regulations and label recommendations. The disposal of these materials requires care in handling and use of all necessary protective equipment.

Read the pesticide label. The following steps should not conflict with label information or state and federal regulations. Contact your immediate supervisor if you see a conflict or have questions.

Wear protective clothing when handling pesticides or pesticide containers, as listed on the pesticide label(s) or on the Safety Data Sheets.

#### **Disposal of Non-rigid containers, such as bags and sacks:**

1. Pesticide material must be emptied into application equipment to the extent made possible by physical agitation of the container.
2. Visually verify that residues have been removed.
3. Roll up the container when empty.
4. Dispose as per label.

**Disposal of Rigid containers, such as plastic or metal:**

1. Pesticide material must be emptied into application equipment to the extent possible by pouring, then visually verifying that the residues have been removed.
2. The container must be at least triple rinsed with clean water until clean, with the contaminated rinse water being poured into the spray equipment. Empty the pesticide and all rinses into the sprayer before the full amount of diluting water is added to the spray equipment. After the container is clean, it shall be punctured and crushed.
3. Dispose as per label.

**Disposal of Unusable Pesticides:**

Unusable pesticides are ones that: 1) are damaged through vaporization, freezing, infiltration of moisture to containers, or photo decomposition; 2) have exceeded their shelf life; 3) have visually changed their composition or structure in some manner; or (4) have totally or partially suspended registrations.

1. The appropriate north or south Park Maintenance Supervisor should be informed of the plans in advance to dispose of pesticides.
2. The person disposing of pesticides should keep a record of distribution on file for three years stored with the other spray records.
3. If the pesticide has reduced effectiveness for example, due to the long storage, moisture or freeze damage, follow the recommendations of the dealer, manufacturer, or licensed consultant and use procedures in this procedure as they apply.

For specific information regarding pesticides that are unusable, refer to recommendations of the dealer or manufacturer or licensed consultant. It is not legal to transfer damaged or altered pesticides to another party for use. It may be necessary to arrange for disposal of the pesticide in a manner recommended by D.E.Q.

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## Pesticide Spill Response

## Procedure #8

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### BACKGROUND

THPRD applicators shall make every effort to avoid any spills when transporting, mixing, or applying pesticides. In the event of a spill, THPRD personnel will not be responsible for clean-up; the primary goal will be containment until emergency responders arrive to clean up the spill.

For reference regarding reporting procedures if a pesticide spill occurs, consult the park district's Safety Manual policy on Reports of Unsafe/Unhealthful Conditions.

### PROCEDURE

For all spills THPRD personnel shall use all available tools to contain the spill, prevent the saturation of soils by pesticides, or the migration of the spilled materials into waters of the state. This includes the use of barriers and absorbent materials.

For spills equal to or greater than one quart of either pesticide concentrate or diluted pesticide solution, spill reporting requirements per DEQ regulations must be met. For information on these requirements, visit the DEQ webpage at <http://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/How-To-Report-A-Spill.aspx>.

### SPILL PREVENTION

THPRD personnel will employ a variety of practices to reduce the potential of a pesticide spill. These will include the following:

#### Purchasing

When procuring chemicals, a factor in determining which chemical formulation to purchase will be the ease with which it can be cleaned up in the event of a spill. Types of packaging and formulations that may help to prevent a spill from occurring will be factors as well. Characteristics of the pesticide, such as toxicity and reactivity that may affect the seriousness of a spill, will also be considered.

#### Preparation

Planning, training of personnel, and acquisition and maintenance of equipment and supplies will be done to reduce the risk of a spill occurring, and to minimize damage should one occur. For example, regular preventive maintenance will be done on sprayers, replacing hoses and valves before they wear out.

## Work Practices

District personnel will use practices to minimize the potential for a spill to occur and to ease clean up should one occur. For example, pesticides shall be placed in a leak-proof container (including backpack sprayers and measuring (“tippy”) bottles) while being transported.

## SPILL RESPONSE PROCEDURE

If a spill occurs, personnel shall use absorbent materials and/or shoveled dirt to create a containment barrier around the spill. **Spills of quantities equal to or greater than one quart** of either pesticide concentrate, or diluted pesticide solution shall require personnel to call

- Oregon Emergency Response System (1-800-452-0311) ***and***
- National Response Center (1-800-424-8802).\*

It may also be necessary to dial 9-1-1 and request Tualatin Valley Fire & Rescue to respond to the spill site for assessment, containment, and/or clean-up of the spill. Additional reporting requirements may be necessary, depending on the recommendations from DEQ.

\*See [Emergency Contact Information](#) at the end of this document for more detailed contact information.

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## Emergency Information Concerning Accidental Pesticide Exposure

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## Procedure #9

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### BACKGROUND

This procedure defines THPRD's response to inquiries by employees and the general public concerning adverse health effects as a result of accidental exposure to pesticides. Due to public concerns, handling of inquiries needs to be professional, calm, and prompt.

THPRD does not have toxicological or other medical expertise on staff. This expertise is however, readily available in the community. Therefore, these concerns will be referred to the medical community.

If a pesticide spill occurs, follow the procedures outlined in the park district's Safety Manual policy on Reports of Unsafe/Unhealthful Conditions.

### PROCEDURE

THPRD will keep employees who apply pesticides informed of proper procedures to be taken in case of pesticide exposure. Anyone inquiring about pesticide exposure will be referred to his or her personal physician, the Oregon Poison Center (OPC), and the Pesticide and Analytical Response Center (PARC). A list of these authorities and other emergency contact information are listed in [Appendix VII](#). A physician who does not deal in these issues could use this list for reference. This list shall be reviewed and updated yearly by the Pesticide Review Committee.

Safety Data Sheet information is available to all personnel for their own use. This information includes symptoms produced by the product and procedures for handling overexposure to individual pesticides. If symptoms of illness occur during or shortly after applying pesticides, call OPC or get the patient to medical attention immediately.

Non-emergency questions received by THPRD shall be referred to the appropriate north or south Park Maintenance Supervisor, who will refer the questioner to the appropriate individuals or sources for more information.

Cholinesterase (acetylcholinesterase) is an enzyme that controls the level of the neurotransmitter acetylcholine, at the junctions between nerves cells. Cholinesterase is essential to the normal function of the nervous system. Organophosphate and carbamate pesticides can lower cholinesterase levels. Examples of organophosphate and carbamate pesticides used by THPRD personnel include some wasp sprays and powders. THPRD shall implement a medical monitoring program for workers who could meet or exceed the handling threshold of organophosphate or carbamate products of 10 hours or more in any consecutive 14-day period. This testing monitors the potential depletion of the enzyme cholinesterase in the blood, which is an indicator of exposure.

## PROCEDURES

### Use planning to avoid emergencies and to expedite aid should an accident occur:

- Research symptoms and problems of each pesticide to be used on the Safety Data Sheets.
- Use all safety procedures and protective gear as recommended on the label or in the Safety Data Sheets.
- Have a copy of the appropriate pesticide label available while applying or transporting pesticides both concentrated and dilute.

### In case of a medical emergency related to suspected pesticide exposure:

- Handle any emergency situation as per First Aid instructions.
- Call for emergency backup if necessary.
- Refer to Oregon Poison Center (see [Appendix VII](#) for contact information).
- Take a label for reference for medical personnel if it is necessary to leave the site.
- Inform your immediate supervisor as soon as possible.
- Inform the appropriate north or south Park Maintenance Supervisor as soon as possible.
- Fill out incident report.

### In response to a non-emergency inquiry:

- Respond to simple direct questions.
- Refer detailed or technical questions to the appropriate north or south Park Maintenance Supervisor.
- Inform your immediate supervisor.

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## Control Methods for Pest Problems

## Procedure #10

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### BACKGROUND

THPRD uses the principles of Integrated Pest Management in managing property. The following terms are used as defined:

- **Threshold:** The level of pest presence, above which unacceptable amounts of danger or injury are likely to occur.
- **Action Level:** The point at which control measures are necessary to prevent a pest population from exceeding the threshold. *Note: The Action Level is often lower than the Threshold Level.*

### PROCEDURE

THPRD shall use Integrated Pest Management principles in controlling pest problems. Plant health and pest infestations shall be monitored and, once action levels have been reached, appropriate responses will be determined. THPRD personnel shall use appropriate control strategies, as defined by the best management practices for the particular pest, to determine a cost-effective and environmentally sound pest control method.

If a pesticide is chosen as the best method for control, then staff shall use the "[Criteria for Choosing a Pest Control Method](#)" (page 8). After controls have been made, the results should be monitored for effectiveness.

Very occasionally, a pest problem may be discovered which requires an immediate response due to the potential for harm to people or pets (for example, giant hogweed growing on property managed by THPRD). In such a situation, a formal meeting of the Pesticide Review Committee may not be possible, so email and telephone communication will need to suffice. In these cases, it will be necessary to clearly and accurately document the discussions and decisions made about addressing the pest problem. Whereas telephone communication may suffice to meet the needs of discussion, a written summary of these conversations will be required for entry into the event records, especially if outside agencies request follow-up documentation of our decision process.

When a pest problem is discovered which requires immediate response, immediate notification of appropriate staff is required. Personnel to be notified should include the immediate supervisor of the employee who first discovered the pest problem, the appropriate north or south Park Maintenance Supervisor, and the Pesticide Review Committee.



Follow-up communication may be done by telephone, but a follow-up email or memo documenting the communication will be completed within three (3) workdays of the conversation and the decisions made about addressing the pest problem.

Treatment of the pest problem shall follow all guidelines within this document.

**BACKGROUND**

The EPA's Current Agricultural Worker Protection Standard (WPS) is a regulation published in 1992 that is aimed at reducing the risk of pesticide poisoning and injury among agricultural workers and pesticide handlers. The WPS applies to THPRD personnel working on agricultural crops and in greenhouses that are specifically used for agricultural crops.

In addition, personnel working on agricultural crops and in greenhouses where pesticides have been applied are required to follow all procedures outlined in the park district's Safety Manual policy Prevention and Control of Workplace Hazards.

**PROCEDURE**

The WPS requires that steps are taken to reduce the risk of pesticide-related illness and injury to the handlers and workers exposed to pesticides. It is therefore essential that all WPS requirements be satisfied for all employees involved with entry into areas where pesticides may be applied.

This is accomplished by providing the following:

- Pesticide safety training.
- Access to labeling information for pesticide handlers and early-entry workers.
- Access to specific information for workers and handlers, including:
  - pesticide applications on the establishment;
  - safety data sheets for pesticides applied on the establishment; and
  - pesticide safety information (such as the display of the WPS poster) that includes emergency information.
- Notification to workers about pesticide-treated areas so they can avoid inadvertent exposures.
- Monitoring of handlers using highly toxic pesticides.
- Required personal protective equipment to handlers.
- Decontamination supplies in case of exposure to pesticides.
- Emergency assistance, including making transportation available to a medical care facility in case of a pesticide injury or poisoning, and providing information about the pesticide(s) to which the person may have been exposed.

Employees who work in or around greenhouse areas (such as at Jenkins Estate) where pesticides are applied must receive the following:

- Employees without pesticide applicator licenses will receive approved WPS training within the time prescribed by WPS regulations. They will be afforded all the WPS worker protections.
- Employees with pesticide applicator licenses need not receive the entire special WPS training. However, they should be familiarized with all special WPS requirements and be aware of the locations of all the elements required to satisfy the standards. They must also be afforded all the WPS handler protections.
- The appropriate north or south Park Maintenance Supervisor will maintain complete WPS records and keep them up to date. The Supervisor will also conduct WPS training for Landscape Services personnel.

Resource material regarding the WPS standards shall be maintained by the appropriate north or south Park Maintenance Supervisor. This material will be available for reference at the Maintenance Office.

**BACKGROUND**

This procedure outlines the methods and procedures for notifying the public that an application of a pesticide has been or is being made at a site. If no mention of re-entry is made on the label, the general rule is to wait until the liquid pesticide is dry or any dust has settled in dry or granular applications before removal of notification or before re-entering an application site. Schools have special requirements for notification.

**PROCEDURE**

It is the practice of THPRD to notify the public of pesticide application sites through ***Do Not Enter*** signs in both English and Spanish. To see an example of the ***Do Not Enter*** sign, see [Appendix IV](#). These ***Do Not Enter*** signs are posted in clearly visible locations, at conspicuous entries and at trailheads, with a maximum interval of 200 feet between each sign. The intent of sign placement is so that park users will encounter them before they enter the treated area.

Signs will be removed after the re-entry specifications have been met.

See [Procedure #15](#) for more information on pesticide application and notification on school property.

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## Pesticide Applications by Non-THPRD Employees

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## Procedure #13

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### BACKGROUND

Pesticide applications that are carried out by personnel other than THPRD employees, such as those done by private contractors must undergo a preliminary approval process before the work begins. In addition, copies of pesticide application records must be submitted to THPRD personnel overseeing the contractor work.

### PROCEDURE

Contractors anticipating pesticide use shall review the Approved Pesticides List ([Appendix I](#)). If a contractor is proposing to use an approved pesticide from this list, then application may proceed per the scope of work of the contract. If they are proposing to use a non-approved pesticide they shall submit an Application For Pesticide Use form ([Appendix II](#)). After application is complete, pesticide application records shall be sent to the contract or site manager for record retention. They must also follow all THPRD notification procedures as outlined in [Procedure #12](#).

Furthermore, they must satisfy all additional THPRD contractual language pertaining to pesticide applications. This may include safety precautions, liability issues, and responsibilities. These issues are dealt with in the contract language agreed to before the project has begun by both the district and the contractor.

### PROCEDURE

The Pesticide Review Committee shall review all proposals for use of non-approved pesticides within fourteen (14) days and approve or deny them based on the principles of this procedure. If a proposal is denied, the Pesticide Review Committee shall suggest changes to the proposal to bring it in line with the principles of this IPM Program, after which the contractor shall resubmit the proposal. The same criteria for determining the best method of pest control for THPRD applications shall be applied to the evaluation of contractor proposals. IPM techniques and methodology shall be required and employed.

Pesticide application records shall include all information per [Procedure #3](#). Records shall be submitted to the contract or site manager within thirty (30) days of the application. Records shall be kept for a minimum of three (3) years.

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## Pesticide Application on THPRD-Managed Property

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## Procedure #14

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### BACKGROUND

This procedure outlines procedures for pesticide application in a safe and legal manner on property that is maintained by THPRD employees. Directions for use, safety, mixing, diluting, storage, and disposal, as well as restrictions on re-entry and days to harvest, must be met as per state rules and product labels. Restrictions and guidelines for pesticide application on school grounds must be followed, as outlined in Procedure #15. In addition, personnel are required to follow all procedures outlined in the park district's Safety Manual policies on Prevention and Control of Workplace Hazards and Hazard Communication (Right To Know).

The law allows an applicator to:

- Apply a pesticide at any dosage, concentration or frequency less than that listed on the label,
- Use any equipment or method of application not prohibited by the label,
- Mix a pesticide or pesticides with fertilizer if the mixture is not prohibited by the label,
- Mix two or more pesticides, if all the dosages are at or below the recommended rate.

All applications shall be recorded on approved application forms.

### PROCEDURE

It is the practice of THPRD for their employees to apply pesticides in a safe and legal manner on THPRD-managed property and to adhere strictly to all requirements for the safe and efficient use of pesticides.

The following criteria shall be met when applying pesticides. Some of these are addressed further in other policies.

- The label is the law.
- Safety equipment and protective clothing (PPE) shall be used wherever indicated and maintained in a safe condition. Note that the required PPE for THPRD personnel includes chemical resistant gloves and protective eyewear, as outlined in [Procedure #2](#).
- Spray equipment shall be maintained in a safe and useful condition. Spray equipment shall be calibrated regularly.

- Anti-siphoning devices shall be used when filling spray equipment.
- “Criteria for Choosing a Pest Control Method,” as outlined in “Approved Pest Control Strategies,” shall be considered in making choices (see [page 8](#)).
- Pesticides used shall be from the approved listed as provided for the appropriate divisions.
- Pesticides shall be applied only when appropriate weather conditions exist.
- Post **Do Not Enter** signs at the pesticide application site in accordance with [Procedure #12](#) until re-entry requirements have been met.
- All applications shall be recorded on approved pesticide application forms.

## PROCEDURES

### Applying Pesticides on THPRD-Managed Property.

1. Skilled staff will determine the threshold and action levels for the specific pest problem.
2. Control strategies are decided on by the gardener, licensed applicator, immediate supervisor (or designee) or inspector. Special situations may require expertise from outside THPRD. The “Approved Pest Control Strategies” (see page 5) shall be used as a guide for decision-making.

### If pesticides are to be used:

1. Choose the pesticide using the “Criteria for Choosing a Pest Control Method” ([page 8](#)) and “Approved Pesticide List” ([Appendix I](#)).
2. Check and calibrate application equipment for safety and efficiency.
3. Check weather conditions, including wind, rain, humidity, and temperature. Applications should be done with calm wind conditions to prevent drift.
4. Adjustments should be made for droplet size and pressure if marginal weather conditions exist. No application should be done where there is unacceptable drift.
5. Post **Do Not Enter** signs at the pesticide application site in accordance with [Procedure #12](#).
6. List re-entry specifications on the signs if required by the label, as in greenhouse applications, per the Worker Protection Standard ([Policy #11](#)).
7. Apply material according to the label and in accordance with state and federal regulations.
8. Record applications of pesticides on the Pesticide Application Record ([Appendix III](#)).
9. Remove signs after suitable re-entry requirements have been met. This is usually when the liquid pesticide has dried, unless indicated otherwise on the label.
10. Evaluate the results of control measures.

**BACKGROUND**

THPRD manages many school properties within the district, including sports fields at numerous Beaverton School District K-12 facilities and the PCC Rock Creek Recreation Facility. Extra care is required when applying pesticides to areas that children use for recreation and other activities. As a result, when THPRD needs to spray on school properties, THPRD must follow strict guidelines for notification of school personnel.

**PROCEDURE**

All pesticide applications on Oregon school properties must follow ORS 634.700. If pesticides applications on school grounds are deemed necessary, written notification must be given to the school IPM Plan Coordinator at a minimum of 48 hours before any application can occur on school grounds. Pesticide application signs must be posted at the time of the pesticide application and can be removed no earlier than 72 hours after the application. Copies of the application records must be sent to the school IPM Plan Coordinator after the application.



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## Designated Dog Off-Leash Area Management

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## Procedure #16

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### BACKGROUND

This procedure defines acceptable practices for managing pests in the designated DOLAs in Tualatin Hills Park & Recreation District parks. For the purposes of this procedure, DOLA sites consist of an officially designated fenced dog off-leash area, including the fence line.

Park users are invited to bring their dogs to recreate in these sites and with less direct control than in other park areas, therefore pest management in these areas needs to reflect this special use. Pest management decisions, methods, and material use shall be carried out in a way that maintains public and dog safety and allows for responsible stewardship of park property.

By their nature, and from the impact of concentrated dog activity, DOLAs can create pest management problems such as increased weeds in turf and the need to control weeds along boundary fence lines. Other pest issues that arise in DOLAs are the presence of noxious, poisonous, allergenic, or otherwise incompatible weeds, and venomous insects and their nests. Proper management of these pests needs to be clearly defined to minimize any potential risks to dogs and their owners and to minimize interference with DOLA use by the public.

### PROCEDURE

Expected pest management issues arising in the DOLAs consist of, but are not limited to:

- Weeds along fence lines, in tree circles, in shrub beds, around park structures, and in turf;
- Management of allergenic or poisonous weeds, such as poison oak;
- Venomous insect management, such as wasp or bee nests.

DOLAs shall be closed so that necessary maintenance work does not impact pets and their owners. To the extent possible, temporary signage will be located outside DOLA boundaries or fencing to alert users in advance of such closures. Pesticide applications will be further accompanied by notification signage and mandated reentry intervals as defined in [Procedure #12](#).

### Herbicide use in DOLAs

When it is necessary to apply herbicides within fenced DOLAs, great care shall be used to time and locate the application to minimize interference with public use. When herbicides

are to be used inside fenced DOLAs or along the interior or immediate exterior of their fence lines, the DOLA shall be closed and dogs excluded. Closure shall be maintained until the reentry requirements as mandated on the product label have been satisfied. This interval typically requires that people and pets be kept out of the area until the sprayed surface has dried. Normal application notification signage as mandated in [Procedure #12](#) shall be used. To the extent possible, additional temporary signage will be located outside DOLA fencing to alert users in advance of closures.

### **Turf broadleaf control**

No turf will be sprayed for broadleaf weed control in currently active DOLAs. In unusual circumstances DOLAs taken out of service may receive selective herbicides as part of an overall turf renovation program.

### **Use of preemergent herbicides**

To be an effective barrier to weed seed germination, preemergent herbicide sites need to be left undisturbed after they are applied. Since the activity of dogs in a DOLA disturbs soil surfaces and reduces or eliminates the effectiveness of a preemergent application, their use in areas of concentrated disturbance sites, such as fenced DOLAs, is often not effective. However, there may be need for preemergent use in less intensively impacted areas.

### **Insecticide use**

As is the case at most park properties, general insecticide use is not expected in DOLAs. However, there may be emergency situations created by the presence of venomous insects such as yellow jackets, wasps, bees and their nests. These insects can create serious safety issues for people and their pets. Control of these insects and any use of insecticides must take place least toxic method available. Examples include heat or soapy water. Nest demarcation guidelines and the response process as described in that procedure are of heightened importance in DOLAs since dogs not in control by their owners may be at increased risk from an active nest site.

### **Mechanical equipment**

All aspects of park user safety and dog safety shall be considered when determining a particular weed control method for a given site. Mechanized weed control equipment such as string trimmers can create hazards such as flying rocks and debris. Off-leash dogs may be at risk when they approach the work area. Care shall be exercised when using this equipment.

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## Pesticide Applications Around Community Gardens

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## Procedure #17

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### BACKGROUND

The existence of community gardens within parks raises the need for special considerations. The gardeners of the Community Gardens Program are of diverse backgrounds and have differing views about pesticide applications in and around the gardens. Since many of the crops derived from the gardens are food crops, care is needed to ensure its quality.

### PROCEDURE

In order to protect food derived from Community Garden sites, be sensitive to the differing viewpoints of the program participants, and adhere to the policies of the Community Gardens Program, the following rules are in effect:

- Garden guidelines state that no herbicides can be used on Community Garden sites. This specifically refers to garden plots, pathways, fence lines and any areas within the garden boundary. Spraying perimeters of the gardens from outside the fence is not permitted.
- Park employees are required to keep applications of all pesticides at least 25 feet from the outside perimeter of Community Garden sites.
- Mechanical means, such as cutting, hoeing, and mulching, can be used to remove or control weeds in the Community Garden sites and perimeters.
- The appropriate north or south Park Maintenance Supervisor shall establish internal guidelines regarding pesticide use by staff.
- Requests for exceptions should be directed to the appropriate north or south Park Maintenance Supervisor.

**BACKGROUND**

This procedure outlines procedures for wildlife control measures on THPRD-managed property where such wildlife are posing a risk to park users or structures.

In addition, this procedure covers procedures for disposal of animal carcasses found on park district property, whether in or next to a natural area, in a developed area of a park, or in a building. Because of the possibility of disease transmission, caution should always be exercised when handling an animal carcass.

**PROCEDURE**

Control of rats and mice is desired because they are vectors for disease. No license is required for mechanical control (traps) of rats and mice. If necessary, chemical control will be contracted out to private pest control professionals.

Beaver and nutria will be allowed to live as part of the site's ecosystem. Exceptions to this practice will be considered on a site-specific basis, and then only when management of these species is coordinated with other agencies, such as Oregon Department of Fish and Wildlife.

Due to possibilities of disease transmission, management and control of other mammals will be contracted out to private pest control professionals. This includes, but is not limited to, control of bats, raccoons, and skunks.

When necessary, carcasses may be moved, or removed, to reduce the impacts of the odors associated with decay. This includes removing fish carcasses that may have died in a stream or a pond that is frequented by the public or moving a mammal carcass farther into a natural area away from a trail.

Animal carcasses less than 20 pounds that are to be removed from a developed area of a park, within or around a building, or from a natural area shall be double-bagged and hauled to a THPRD dumpster for disposal at a landfill. Carcasses larger than 20 pounds found in a developed area of a park or around a building shall be moved away from where the public may be in direct contact.

In all cases, staff shall wear rubber gloves and eye protection when handling animal carcasses. Staff shall immediately wash after handling carcasses.

**BACKGROUND**

THPRD recognizes the special importance of waterways (e.g., rivers, streams, ponds, water quality facilities) and wetlands that fall under our stewardship. The sensitive nature of such habitats, their plant and animal communities, and their direct link with other waterways require that we establish specific policies to ensure their health. This addition to the THPRD Integrated Pest Management Program outlines this special treatment. It establishes clear guidelines and limitations regarding maintenance methods and materials for both these waterways and the parklands adjacent to them.

**PROCEDURE****Application Equipment Used**

Pesticide delivery for all listed areas in this procedure will be carried out by hand with directed, low volume, single wand sprayers, wiping, daubing, and painting equipment, injections systems, or drop spreaders. Typically, this is done by backpack sprayers, but may also include sprayers with larger fill tanks as long as the same kinds of hand application methods are used. These methods of delivery result in low volume applications and low-pressure spraying. This minimizes the formation of fine mists that might be carried off target. These practices ensure that applied materials will reach targeted plants or targeted soil surfaces.

**Pesticide Drift**

When applications of pesticides are being made in or near waterways and wetlands, great care will be exercised in the process. Equipment used in the application, and the adjustment of such equipment, shall limit drift to the greatest extent possible. For example, adjustment of nozzle size, pressure regulation, droplet size, and height of spray wand, are all techniques that can be modified to reduce unwanted drift of pesticides. Addition of adjuvants to the spray solution to reduce drift shall be considered.

**Pesticides Available**

There may be a need to treat vegetation in or near a waterway or wetland. Only those pesticides and adjuvants approved for use in and around wetlands, per product labels, shall be used.

### **Record Keeping Requirements when applying in, or within three feet of, a wetland or waterway**

All regular application record keeping requirements will be adhered to for all pesticide applications (see [Procedure #3](#)). When applying pesticides over, in, or within three feet of, a waterway or wetland, an applicator also needs to also record the linear feet along the waterway or wetland that was treated. Note that the applicator should only record the linear feet that were treated of one side of the stream, even if both sides of the stream were treated. This information will be made available to agencies that request it.

### **Changes to this Procedure - Emergency / Short Term Process**

A need may arise for modifications or additions to the THPRD Waterways Pest Management Procedure. There may be situations where THPRD cannot wait for the formal review process to take place. An example is the unlikely, but possible, introduction of a new and destructive pest to a waterway or wetland that needs to be treated within a short time frame. In such a case, THPRD representatives will develop an IPM strategy within the guidelines of this document to deal with the threat.

### **Management Practices Within Waterways**

Mechanical and cultural methods should always be considered prior to the use of pesticides for control of pest species within waterways. Once these methods for control have been exhausted or shown to be ineffective, the site manager shall submit a proposal for the use of pesticides to control the target pest species. The Pesticide Review Committee shall review the proposal and approve or deny it based on the principles of this IPM Program, as well as considerations of impacts to adjacent and/or downstream habitats and wildlife. If a proposal is denied, the Pesticide Review Committee shall suggest changes to the proposal to bring it in line with the principles of this procedure, after which the site manager shall resubmit the proposal for approval.

All applications shall strictly follow the pesticide and adjuvant label requirements, including timing (e.g., time of day and seasonality), frequency of application, duration of application, and proximity to potable or irrigation water intakes. Only applicators holding Aquatic category pesticide application licenses shall be allowed to apply pesticides within waterways. All required permits shall be obtained prior to application of pesticides, and all required records shall be completed immediately after application of pesticides. Records shall be kept for a minimum of three years (please see [Procedure #3](#) for more information on Record Keeping).

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## Mulch Management

## Procedure #20

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### BACKGROUND

Mulches and other ground coverings are often employed during the installation and restoration of landscapes as well as their ongoing maintenance. They are utilized for a variety of reasons. Mulches suppress weeds, help to retain moisture around plants, reduce possible erosion, and provide visual enhancement.

### PROCEDURE

Use of landscape mulches in buffer areas should consider any possible impacts to the buffer as well as nearby waterways. These impacts may include:

- Inadvertent introduction of non-native weeds to the site.
- Migration of mulch material into waterways.
- Nutrient leaching into waterways.

Choices of mulches should take these concerns into account. Mulching in areas that are below ordinary high-water line is discouraged in any buffer areas. Seeding of cover crops for erosion control is allowed in buffer zones. Use of cover crops in buffer areas should never introduce any persistent non-native plant species.

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\* *The listed web addresses are current as of September 2017.*



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## Approved Pesticides List

## Appendix I

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**UPDATED AND APPROVED: 7/26/2018**

### DISCLAIMER

The use of pesticide trade names in this document does not constitute an endorsement by the Tualatin Hills Park & Recreation District. Trade names have been used specifically for reasons of reader familiarity and no discrimination is intended.

### Approved Pesticides List

Following are lists of pesticides that are approved for use in parks. Part of a good IPM approach allows for the choice of ideal materials for a specific need and for managing pest resistance with rotations of different products rather than using a "one material fits all" approach.

It is also important to understand that pesticide applications are used after many other IPM strategies have first been either employed or considered. The majority of THPRD pest management practices never involve the use of pesticides. Similarly, the majority of park acreage never receives any kind of pesticide application. Other IPM strategies THPRD employs include prevention of pests through policy and park design, and control of pests through cultural practices, biological controls, and mechanical methods.

All pesticides available for use within parks must first be placed upon an approved list after undergoing a centralized review process that carefully examines the characteristics of the individual product and whether it would be an appropriate addition within our program. Issues of efficacy, public health and safety, potential environmental impacts, overall plant health requirements, land management needs, and other concerns are considered during this process. Applicators within a THPRD departmental work unit or department (e.g., Building Maintenance, Sports Fields Maintenance, Natural Resources) must then make their choices of materials from the approved list. Individual departmental work units or departments have different responsibilities and pest management requirements for the lands under their care.

Pesticides not appearing on the following lists are not available for use. Careful attention should be paid to the further limitations of pesticides available for use within waterway buffer zones and aquatic sites as outlined and defined in the [Waterways Pest Management Procedure](#). Additions to the approved lists must follow the process as described in [Procedure #4](#) (Pesticides Approved for use by Tualatin Hills Park & Recreation District Personnel).

Pesticides on the following lists are organized alphabetically by active ingredient, with examples of brand names containing the active ingredients in parentheses after the active ingredients.

## **HERBICIDES**

### *Pre-emergent:*

Benfen+oryzalin: (**XL 2G**) Combination product for wider spectrum weed control. Useful in shrub beds and where liquid products are more difficult to apply. This is a primary granular pre-emergent product.

Bensulide: (**Betasan 4.8E**) Pre-emergence control of crabgrass and annual bluegrass turf.

Carbaryl: (**10% Sevin Granules**) Insecticide for soils.

Dichlobenil: (**Casoron 4G**) Occasional use in park shrub beds, tree circles, and other areas to prevent weed germination.

Dimethenamid-P+pendimethalin: (**Freehand 1.75G**) Used on shrub beds, tree circles, and other area to control a variety of broadleaf and grass weed species.

Indaziflam: (**Specticle G**) Pre-emergent herbicide for the control of annual grasses, annual sedges, and annual broadleaf weeds in warm season turfgrass, landscape ornamentals, and hardscapes.

Isoxaben: (**Gallery 75 DF**) Used on shrub beds, tree circles, and other areas. Can be used in combination or rotation with oryzalin (e.g., Surflan AS) to broaden the spectrum of weeds prevented.

Napropamide+oxadiazon: (**PrePair**) Combination product increases the spectrum of weeds controlled. Useful in small shrub bed areas and newly planted sites.

Oryzalin: (**Surflan AS**) Used in shrub beds, tree circles, and other park areas.

Oxadiazon: (**Ronstar 2G**) An alternative to increase spectrum of weeds controlled. Useful in small shrub bed areas and newly planted sites.

Trifluralin+isoxaben: (**Snapshot 2.5 TG**) Used in shrub beds, tree circles and other park areas. This is a primary granular pre-emergent product.

Flumioxazin: (**Sureguard**) Used in container and field grown conifers and deciduous trees, and deciduous trees, around established woody ornamentals in landscapes, to maintain bare ground non-crop areas and dormant turfgrass.

Post-emergent:

2,4-D (ester)+mecoprop-p acid+dicamba acid+carfentrazone-ethyl: (**Speedzone**)  
Broadleaf weed control product for ornamental turf.

2,4-D [2,4-dichlorophenoxyacetic acid, dimethylamine salt]+triclopyr: (**Chaser** products)  
Broadleaf weed control product for ornamental turf.

Ammoniated soap of fatty acids: (**Quik-Fire**) For control of algae, moss, and some weeds.

Clethodim: (**Envoy Plus**) Selective product for grass control in shrub beds.

Ethofumesate: (**Prograss**) Annual grass and broadleaf weed control for turf.

Glyphosate: (**Roundup ProMax** (includes a surfactant), **Rodeo, Aquamaster**) Primary vegetation control product used with other control methods in shrub beds, tree circles, and other park areas, controlling invasives, and in habitat restoration. Also used as an injected herbicide on select weeds.

Halosulfuron-methyl: (**SedgeHammer**) Specialty systemic weed control for horsetail and nutsedge species.

Imazapyr: (Polaris) Broad-spectrum herbicide. Approved for treatment of aquatic weeds and in wetlands.

Pelargonic acid+fatty acids: (**Scythe**) Minor use contact herbicide used for top-kill of early-stage, easily killed weeds.

Potassium soap of fatty acids: (**Garden Safe Moss and Algae Killer**) Moss control desiccant. For structures and non-vegetated surfaces.

Sulfentrazone+2,4-D [dimethylamine salt]+mecoprop p [dimethylamine salt]+dicamba [dimethylamine salt]: (**Surge**) Broad spectrum broadleaf weed control for turf.

Triclopyr amine: (**Garlon 3A, Lilly Miller Blackberry and Brush Killer**) Selective product for woody and difficult to control perennials. Used both in spray and cut-stem applications, also for invasives and habitat restoration.

Triclopyr choline salt: (**Vastlan**) Selective broadleaf control product with very low volatility. Used in both spray and cut-stem applications.

Triclopyr ester: (**Garlon 4**) Ester form of triclopyr for specific applications needing the characteristics of this form (e.g. cut-stem treatments outside of buffer areas).

Trinexapac-ethyl: (**T-nex**) Plant growth regulator used when striping ball fields.

Glufosinate Ammonium: (**Cheetah Pro**) Broad spectrum nonselective postemergence herbicide used for broadleaf control.

### **FUNGICIDES**

Calcium polysulfide: (**Lime Sulfur** solution) Liquid spray used to prevent foliage diseases during the growing season.

Mefenoxam [=Metalaxyl]: (**Subdue MAXX**) For control of diseases on ornamentals and landscape plantings.

Propiconazole: (**Banner MAXX, Shepherd**) Liquid spray formulated for use in both dormant and growing season to control diseases.

Triforine (**Funginex DC**): For control of diseases in rotation with other materials primarily on specialty rose gardens and special situations in general parks. Not commonly used in park districts.

### **INSECTICIDES**

Bacillus thuringiensis israelensis (Bti): (**Vectobac G**) Granular formulation. For control of mosquito larvae in ponded areas.

Bacillus thuringiensis kurstaki (Btk): (**Btk in solution**) Liquid formulation. For control of lepidopterous insects on vegetable, fruit, and field crops.

Carbaryl: (**10% Sevin Granules**) Carbamate insecticide for soil insects, such as ants and cutworms.

Deltamethrin: (**DeltaDust**) Synthetic pyrethroid. Waterproof dust used to treat flying and crawling insects for up to 8 months. Works well on ground-nesting wasps.

Horticultural oils: (**Sunspray**) General insect control both for dormant and growing season use.

Lambda-cyhalothrin: (**Scimitar CG**) Synthetic pyrethroid used to control insect pests on athletic fields, ornamentals beds, and lawns.

Pheromone trap: (**Wasp traps**) One or more pheromones are inside in a trap that captures wasps, which then die of dehydration.

Potassium soap of fatty acids: (**M-Pede, Safer Insecticidal Soap**) General soft body insect control.

(S)-methoprene: (**Altosid XR Briquettes**) Water soluble briquette. Growth regulator to control mosquito larvae in ponded areas.

Tetramethrin: (**Bee Bopper** and other pyrethroids) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

### **MISCELLANEOUS**

Castor oil USP+sodium lauryl sulfate: (**Chase Mole and Gopher Repellant**) Mole and gopher repellant.

Glue traps – insects: (**Catchmaster Scented Fly Strips**) For catching insects indoors.

Glue traps – rodents: (**Catchmaster Baited Glue Traps**) For catching rodents indoors.

Marker/colorant/dye: (**Turf Trax, Signal**) Used in spray solutions to temporarily mark area of application.

Metaldehyde: (**Corry's Slug and Snail Death**) For specialty areas susceptible to unacceptable damage, such as in some annual flowerbeds. Not typically used, but retained on list for use if loss is unacceptable.

Spray adjuvant: (**R-11, LI 700**) Surfactant used in solutions to enhance spray coverage and increase efficacy.

### **USE UP AND DO NOT RESTOCK LIST**

The remaining listed materials are to be used until stocks are gone and are not to be restocked:

Acephate: (**Orthene Turf, Tree & Ornamental 97 Spray**) Organophosphate insecticide.



**TUALATIN HILLS**  
PARK & RECREATION DISTRICT

## Application for Pesticide Use

Requester Name: \_\_\_\_\_

Department or Company: \_\_\_\_\_

Park or Project Site: \_\_\_\_\_

Target Pest: \_\_\_\_\_

Product Brand Name: \_\_\_\_\_

Active Ingredient(s): \_\_\_\_\_

Manufacturer/Distributor: \_\_\_\_\_

Application Methods – Describe equipment to be used, solution concentrations, and adjuvants to be used:

\_\_\_\_\_  
\_\_\_\_\_

List nearby schools, community centers, community gardens, dog parks, playgrounds, and other considerations:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Pesticide Application Record Example

## Appendix III

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<b>Pesticide Application Record</b>	<b>10001</b>
Tualatin Hills Park & Recreation District, 15707 SW Walker Road, Beaverton, OR 97006 503-645-6433	
Date/Time of Application: _____ From _____ a.m./p.m. To _____ a.m./p.m.	
Weather (cloud cover, wind, temperature) _____	
Applicator/Supr. Name _____ Applicator/Supr. License Number _____	
- Applicator Name _____ - _____ Applicator License Number _____	
Applicator Name _____ Applicator License Number _____	
Site Description (include specific location within a park and the approximate square footage of gross area treated) _____	
Prod. Brand Name _____ EPA Reg. No. _____ Mixture Rate (% solution) _____	
Prod. Brand Name _____ EPA Reg. No. _____ Mixture Rate (% solution) _____	
Prod. Brand Name _____ EPA Reg. No. _____ Mixture Rate (% solution) _____	
Pesticide Supplier(s) _____ Amt. of <b>diluted</b> prod. used _____ Equipment Used _____	
Pests treated _____	





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**Notification Form Letter Example****Appendix V**[back to top](#)

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To: \_\_\_\_\_

Of: \_\_\_\_\_

From: \_\_\_\_\_

Tualatin Hills Park & Recreation District  
15707 SW Walker Road  
Beaverton, Oregon 97006

Hello:

Tualatin Hills Park & Recreation District will be applying **(name of pesticide)** for **(purpose of pesticide)** at **(location of application)** on **(date of application)**. The pesticides will be applied by a licensed applicator.

Please look for our “Do Not Enter” signs to tell you that an application is taking place. Please restrict activities in the area of application until the signs are removed.

If you have any concerns or wish additional information, please contact the Park Maintenance Operations Office at 503-645-3539.

**Action level:** The point at which control measures are necessary to prevent a pest population from exceeding the threshold.

**Acute:** Refers to exposure of a single or limited dose of a pesticide.

**Adjuvant:** A substance other than water, which is not in itself a pesticide, but which enhances or is intended to enhance the effectiveness of the pesticide with which it is used. Adjuvants for use with agricultural pesticides have been categorized as extenders, wetting agents, sticking agents and fogging agents.

**Biological Control:** Control of pests by disrupting their ecological status, using organisms that are natural predators, parasites, or pathogens.

**Buffer Area:**

An upland area immediately adjacent to or surrounding a wetland or other water that is set aside to protect the wetland or other waters from conflicting adjacent land uses and to support ecological functions. (from Oregon Department of State Lands, Division 85, OAR 141-085-0510).

**Carbamate:** Any of a variety of organic compounds that are derivatives of carbamic acid and exert an anticholinesterase action on the nervous system like organophosphates. Often used in insecticides.

**Chronic:** Refers to exposure to small, repeated doses of a pesticide over time.

**Emergent** (weeds or plants): Growing above the surface of a water body. Does not include floating plants.

**Handler** (of pesticides): As regards this program, a handler is anyone who uses pesticides as part of their job.

**Invasive** (organisms): Tending to spread into an area without natural controls.

**Non-native:** Not indigenous to an area. This usually applies to organisms that are of foreign origin. Also known as *exotic*.

**Noxious** (in reference to weeds): Highly likely, or previously shown to be, invasive. Such plants often show characteristics such as high annual seed production, high germination rate of seeds, and both vegetative and sexual reproduction. These plants are often non-native and typically have no natural enemies in local ecosystems to keep them in check.

**Ordinary High-Water Line (OHWL):** The line on the bank or shore to which the high water ordinarily rises annually in season. The OHWL excludes exceptionally high-water levels caused by large flood events (e.g., 100-year events). (from Oregon Department of State Lands, Division 85, OAR 141-085-0510).

**Organophosphate:** Any of a variety of organic compounds that contain phosphorus and often have intense neurotoxic activity. Often used in insecticides.

**Pest:** A general term for any plant, animal, or disease that adversely affects other plants, animals, landscaped areas, or natural areas.

**Pesticide:** A general term for any substance used to control pests. This includes natural and synthetic substances, as well as organisms (biological controls) used to control a pest.

**Pesticide Storage Container:** A container for storage of pesticides that meets both OSHA and National Fire Protection Association, Code 30, specifications.

**Rinsate:** Rinse water or dilute pesticide from cleaning pesticide equipment.

**Solution:** A mixture made by dissolving a solid, liquid, or gas in a liquid. The mixture will not separate or settle out in normal use.

**Submerged (weeds or plants):** Not growing above the surface of a water body. Includes floating plants (even if they are not rooted in soils).

**Surfactant:** Surface Acting Agent - Material that can greatly reduce the surface tension of water when used in very low concentrations. Soap is a simple surfactant. Pesticide surfactants are nonionic (do not ionize but will have a slight electrostatic charge due to the polarity of dissimilar atoms in the molecule), anionic (ionized, have a strong negative charge), or cationic (ionized, have a strong positive charge).

**Inversion (temperature):** The weather condition where the temperature at ground level is lower than that of the air above. Often characterized by fog or formation of a layer of smoke as it rises.

**Threshold:** The level of pest presence above which unacceptable amounts of danger or injury are likely to occur.

**Weed:** Any plant that interferes with current management of the land or where it is not wanted.

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## Emergency Contact Information

## Appendix VII

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### Oregon Emergency Response System

Hotline: **1-800-452-0311**

Web address: <http://www.oregon.gov/oem/emops/Pages/OERS.aspx> \*

### National Response Center

Hotline: **1-800-424-8802**

Web address: <https://www.epa.gov/pesticide-incidents/how-report-spills-and-environmental-violations#who> \*

### Oregon Poison Center

Hotline: **1-800-222-1222**

Web address: <http://www.ohsu.edu/xd/outreach/oregon-poison-center/index.cfm> \*

Oregon Health & Science University

3181 SW Sam Jackson Park Rd.,

Portland, Oregon 97239

### Pesticide and Analytical Response Center

Phone: **503-986-6470** or **1-800-688-7272** (M-F, 8:00 am – 5:00 pm)

Email: [parc@oda.state.or.us](mailto:parc@oda.state.or.us)

Web address:

<http://www.oregon.gov/ODA/programs/Pesticides/Pages/PARC.aspx> \*

\* *The listed web addresses are current as of September 2017.*