

Integrated pest management



March 2014



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INTEGRATED PEST MANAGEMENT POLICY AND EXECUTIVE SUMMARY

Metro's integrated pest management policy supports Metro's toxics reduction goal set out the Sustainability Plan for Metro Internal and Business Operations adopted by Metro Council in 2010 by Resolution No. 10-4198. Metro's toxics reduction goal is to eliminate the use or emissions of persistent, bioaccumulative toxics and other priority toxic and hazardous substances by 2025. To this end, Metro's Sustainability Plan calls for an integrated pest management plan:

Toxics reduction action 2.2 is to "Reduce use of herbicides and pesticides in all Metro operations. Create and implement an IPM (Integrated Pest Management) policy to reduce use of herbicides and pesticides on all Metro properties. Policy should address the unique needs of different property types, including developed property landscapes and natural area restoration needs. Program should phase out high risk pesticides as indicated by Salmon Safe. Begin tracking and reporting of all herbicides and pesticides used by Metro staff and contractors. *Page 35, Sustainability Plan for Metro internal and business operations.*

This policy was developed to meet the spirit of the above action and to provide the framework through for implementing integrated pest management practices while accommodating Metro's land and facility management needs. This policy aims to create a framework to meet goals by adopting flexible, site specific, pest solutions at Metro's parks, natural areas and built facilities.

It is Metro's policy to:

- Manage, track, report and ultimately minimize the use of toxic products on all Metro properties.
- Ensure that staff and contractors adhere to the highest standards for safety and best practices when applying pesticides at Metro facilities.
- Ensure that all staff and contractors that apply, advise the use of and procure pesticides are certified by an internal or external licensing or certification.
- Treat pests according to practices outlined in Metro's best management practices documents.
- Post notification at entrances and in conspicuous locations when applying pesticides at Metro parks, natural areas and built facilities.
- Respond to and report spills immediately according to DOT, EPA, DEQ and OSHA guidelines.
- Only use pesticides that are on the approved chemical list for the property or facility.
- Define the method and procedure for storage and disposal of pesticide materials for all Metro locations and personnel.
- Create an integrated pest management working group to share practices and knowledge, and to enable policy goals to be achieved.

This policy standardizes how pesticides are managed, tracked and reported to minimize the use of toxic products on all Metro properties. It creates standards for product procurement, handling and usage and establishes a framework for providing integrated pest management training and education by equipping staff with best management practices. The policy includes mandatory licensing requirements and creates standards for working with contractors and local government agencies. These standards will be written into Metro's contractual and intergovernmental agreements. Metro's integrated pest management policy creates guidelines for pesticide application and correct pesticide

disposal and spill response methods in an emergency situation. Approved chemicals lists dictate what chemicals can be used within Metro's departments and at each property or site. Each department is responsible for tracking and reporting chemical applications until Metro has developed a centralized tracking and reporting system regarding product usage at Metro sites. The adoption of an integrated pest management working group will provide staff, managers and contractors with a forum for sharing knowledge and information. The use of effective communication, program oversight, and coordinated efforts is designed to ensure that Metro achieves its policy goals. The integrated pest management policy applies to all Metro facilities and operations.

SECTION 1: WHAT IS INTEGRATED PEST MANAGEMENT ?

Integrated Pest Management is a strategy used by Metro in the maintenance of its natural areas, parks and built facilities. The following definition is from the U.S. Environmental Protection Agency's publication, *Integrated Pest Management for Turfgrass and Ornamentals*:

Integrated pest management is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means with the least possible hazard to people, property and the environment. The goal of integrated pest management is to manage pests and the environment so as to balance costs, benefits, public health and environmental quality. Integrated pest management systems use all available technical information on the pest and its interactions with the environment. Because integrated pest management programs apply a holistic approach to pest management decision making, they take advantage of all appropriate pest management options, including, but not limited to pesticides. Thus integrated pest management is: a system using multiple methods; a decision-making process; a risk reduction system; information intensive; cost-effective; site specific.

The University of California-Davis defines integrated pest management as follows:

Integrated pest management is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

The integrated pest management process first determines if a pest needs to be managed, and if so, how best to do it. Key elements are information gathering, well-informed decision making and monitoring of results. The process promotes effective, low-risk management strategies to manage pests. The controls used in this program include cultural, physical, mechanical, manual, biological and pesticide methods and materials. Often a combination of methods is used.

Metro's integrated pest management policy is designed to standardize specific work practices at Metro which are performed by both staff and contractors across multiple sites. The specific pest prevention and control measures explained in this policy are aimed at pest management applications at Metro's built facilities, parks and natural areas. Within these standardized work practices, Metro professionals will evaluate methods selected to manage specific pest populations on a case-by-case

basis. In order of preference, from most preferable to least preferable, these methods of vegetation and pest management include:

- Proper planning and management decisions
- Cultural methods
- Mechanical and physical controls
- Biological methods
- Chemical methods: Use of the least toxic and most effective pesticide from Metro's approved chemical lists

These methods are explained and described further in Section 3.

PESTICIDE USE

Pesticide is a general term for any substance intended for preventing, destroying, repelling or mitigating any pest. The term also includes herbicides. Managing pests may require pesticides as part of an integrated pest management approach. Metro minimizes risk by careful product selection and application. Pesticides vary greatly in their toxicological characteristics so choice of materials is a key element of good integrated pest management decision making.

Metro pesticide applicators are required to comply with all pesticide label directions, federal, state, and local pesticide regulations, applicable safety laws and Metro policies.

SAFETY

When Metro employees use pest management equipment and apply materials, Metro provides each worker all appropriate personal protective equipment. Use of such equipment is an important part of safely applying pesticides as well as properly using mechanical equipment. **No Metro volunteer may apply pesticides.**

LAWS AND REGULATIONS

Several federal and state agencies regulate the use of pesticides. Metro conforms to all applicable pesticide laws and regulations. **Metro allows only Oregon State licensed pesticide applicators to buy, advise, use or supervise pesticides and their application on Metro-owned properties.** To obtain a Public Pesticide Applicator's license, applicators must pass a series of tests given by the Oregon Department of Agriculture covering pesticide laws, safety, use, integrated pest management, and other subjects. Applicators may be personally liable if they apply pesticides contrary to state and federal laws and label directions.

Once licensed, applicators must accumulate 40 credit hours of state-approved recertification training over a five-year period to maintain their license. Metro provides access to recertification training hours to its employees every year. Class sessions are tailored to provide instruction in diverse aspects of pest management and safety that are relevant to Metro's integrated pest management goals.

Applicators are required by law to record specific information when applying pesticides. Metro has designated forms for this purpose. Information recorded includes date and time of application,

conditions, locations and formulations and amount applied. An examples of this form is found in Appendix E.

SECTION 2: LICENSING, CERTIFICATION AND CONTINUING EDUCATION OF PEST MANAGEMENT PERSONNEL AT METRO

PURPOSE

This section defines the education, training, licensing and certification requirements for applicators who are applying pesticides, or supervising others applying pesticides.

BACKGROUND

State pesticide applicator licensing assures a level of expertise and familiarity with pest management practices and pesticide materials. Metro is committed to maintaining a high level of expertise in its workforce. The continuing education requirements of state licensing also help keep personnel up-to-date on pest management theory and practice. Therefore, Metro requires all personnel buying, using, supervising or advising the use of pesticides maintain an public Oregon state applicators license. While Oregon law does not require this level of licensing for the majority of applications carried out on Metro land, Metro has always been committed to maintaining a high level of expertise in its workforce and chooses to exceed the minimum standards. In addition, no Metro volunteers may plan the use of or apply pesticides.

PROCEDURE

All Metro personnel applying pesticides or directing the application of pesticides by other staff or contractors shall be certified as state public pesticide applicators by passing the appropriate Oregon Department of Agriculture examinations. In order to maintain a valid Oregon Department of Agriculture state license the applicator currently must acquire a minimum of 40 hours of state-accredited supplementary education over a five-year period, with no more than 15 hours accumulated in any given year. Employees applying household products such as ant baits, pantry moth traps or wasp spray will not be required to obtain this level of licensing. However, employees applying these household level pest removal products will be required to watch a short video explaining the principles and practices of integrated pest management and to sign a form stating that they have watched the video and understand its content. Metro will keep pesticide applicators informed of approved education to meet continuing certification and licensing requirements. Information regarding state licensing requirements and status may be found at the Oregon Department of Agriculture's website: <http://www.oregon.gov/ODA/PEST/>.

SECTION 3: MANAGEMENT METHODS FOR PEST PROBLEMS

PURPOSE

This section establishes the principles governing Metro's approach to pest management.

BACKGROUND

Metro utilizes the principles of integrated pest management in managing facilities and land under its care. Integrated pest management is a coordinated decision-making process that uses the most

appropriate management strategy on a site-specific basis. The process first identifies the pest, determines if the pest needs to be managed, and if so, how best to do it. Key elements of an integrated pest management program are information gathering, well-informed decision making and monitoring of results. Through proper decision making, the process promotes effective strategies to manage pests.

PROCEDURE

Metro shall employ integrated pest management principles in managing pest problems. Staff shall monitor facility and landscape conditions, assess appropriate thresholds and determine action levels on a site-by-site basis. All licensed applicators shall determine an effective, feasible and economically sound pest management method that does not create unusual risk to the public, the environment or staff.

If a pesticide is chosen as the best method for pest management, licensed applicators shall choose appropriate materials only from the approved chemical list specific to their facility, site or work unit. The suitability of the material, nature of the site, potential health and safety effects, potential environmental effects, overall costs, characteristics of the product and any other special considerations related to the situation shall be taken into account in this process. After control measures have been made, employees or contractors should appropriately monitor the facility or site to assess any impact and the efficacy of the measures taken.

Pesticide resistance describes the decreased susceptibility of a pest population to a pesticide that was previously effective at controlling the pest. To avoid pesticide resistance at a site, different pesticide products appropriate for controlling a target pest and listed on the approved chemical list for the program addressing the pest, should be rotated.

Proper planning and management strategies

The management techniques used in this manual include proper planning and management decisions, and cultural, mechanical and physical, biological and chemical methods. Often a combination of methods is used.

Management of pests via prevention strategies can be highly effective and low in cost. This approach focuses on eliminating problems before they begin. Examples include prioritization of specific areas for control measures and establishing thresholds for action and the tolerance level for different pests. These thresholds vary according to pest, plant and site. Action thresholds are determined on a case-by-case basis.

Threshold is used to describe a level of pest presence above which unacceptable amounts of negative plant health impacts, environmental impacts, effects on infrastructure and assets, intolerable aesthetic impacts, or undue safety risks are likely to occur.

Action level is the point at which control measures are necessary to prevent a pest population or its impact from exceeding the threshold.

Best management practices are methods or techniques that have consistently shown results superior to those achieved with other means, and that are used as benchmarks or guides for defining Metro's on site practices.

Proper site design and plant selection are significant ways to avoid pest problems. While no landscape or facility can be designed to be completely free of pest management needs, such considerations need to be part of the planning process. Examples include:

- Use of disease- or pest-resistant or tolerant plant species or varieties.
- Removal of pest-susceptible plants, or replacement with pest-resistant plants or varieties.
- Elimination or modification of problematic areas.
- Proper spacing of plant material to reduce the incidence of pest problems.
- Maintenance of species diversity and elimination of monocultures in plantings.
- Elimination of alternate hosts for diseases.
- Establishing over-story plantings, occluding groundcover plantings and other design techniques benefiting both the establishment of plants and the reduction of weeds.

Cultural practices

Proper cultural practices are essential to well-managed facilities and landscapes and can often help maintain their resistance to pest problems. Examples include:

- Knowledge of the cultural requirements of plants to best provide proper conditions for optimum plant health and resistance to pests.
- Adequate site, soil and grade preparation before landscape installation.
- Use of disease-resistant grafting rootstock or scion wood.
- Proper timing and use of water to reduce over or under watering.
- Proper timing and use of fertilizer to eliminate over and under fertilization.
- Raking and debris removal in certain garden or landscape situations, and removal of pest sources.
- Pruning and plant removal to promote air circulation and light penetration for plant health.
- Removal of diseased, infested, damaged or dead wood.
- Mulching for weed reduction, water retention, winter protection and root zone improvement.

Mechanical and physical controls

Mechanical and physical methods are often employed to manage pests. Examples include:

- Mechanical clearing of weeds in rough areas.
- Hand weeding in shrub beds.
- Mowing of rough turf areas for vegetation control.

- Traps such as yellow sticky boards for greenhouse insects and traps for mammalian pests.
- String trimming to control unwanted vegetation.

Biological methods

Where applicable, biological control of pests is useful to manage pests. Typically most important is minimizing disruption of natural pest controls that may be present. Examples include:

- Introducing insect or disease parasitoids, predators and microbial products to control pests. Any use or release of non-native insects is subject to the approval of the department director.
- Minimizing the use of disruptive techniques and materials in landscapes that may destroy natural pest control organisms.

Chemical methods

Chemical controls include both naturally derived and synthetically derived pesticides. Pesticides are derived from many sources, vary widely in their characteristics and must be examined individually to determine their suitability within the integrated pest management approach. Examples include:

- Placement of pheromone traps
- Disinfecting materials or equipment to prevent spread of pests
- Application of naturally and synthetically derived pesticides

Approved chemical list is a list of those chemicals approved for use by Metro's integrated pest management working group for a specific Metro department that either applies pesticides or is responsible for overseeing contractors applying pesticides.

Herbicide resistance is the inherited ability of a non-native plant to survive and reproduce following exposure to a dose of herbicide that would normally be lethal to a non-native plant.

SECTION 4: CRITERIA FOR CHOOSING A PEST MANAGEMENT METHOD

Section 4 provides additional criteria to inform staff and contractors in the determination of the pest management method best suited for the particular site or need.

Nature of the site

Different Metro sites may have varying standards of acceptable care and appearance. Determining whether a particular Metro site requires control of pests, and what level of control, requires taking these differences into account and specifically considering the following:

- Erosion susceptibility and potential movement of soil through runoff
- The intended use and function of the facility or landscape
- The feasibility of the method given the area and scope of the problem
- The relative importance and public expectation of a facility site or planting
- Site conditions such as soil type, grade, drainage patterns and presence of surface water

Possible health and safety effects

Pest management methods have varying possible health and safety effects. It is necessary to assess the following:

- Short and long term toxicological properties, equipment operation safety issues, worker safety and any other related potential health effects of the materials or methods, both to the applicator and especially vulnerable populations such as young children and pregnant women
- Equipment operation safety issues for both the operator and the public
- Worker safety and worker injury issues involved with carrying out the method

Possible environmental effects

Some pest management methods may cause both acute and chronic toxicity and other related potential effects to non-target organisms including mammals, birds, amphibians, fish, invertebrates and other organisms. Consider the following:

- Environmental effects from potential bioaccumulation
- Potential impacts to non-target plants and other organisms from materials or methods
- Potential impacts to federally listed threatened or endangered species
- Possible introduction or establishment of invasive plants

Costs

In choosing a pest management method, consider both short and long term costs as they relate to:

- Costs of the material or method
- Application and labor costs
- Length and quality of pest control
- Feasibility of using a particular method or product

Characteristics of the product

A pest management product must match the problem it is meant to tackle. Consider:

- Target pests and target sites of the product being used
- Possible residual effects, decomposition pathways, rates and breakdown products
- Volatility and flammability
- Product formulation and package size
- Leachability, solubility and surface and soil bonding characteristics of the product
- Ease of cleaning equipment after use
- Positive and negative synergistic effects of pesticide combinations
- Components of so-called inert ingredients and trademarked adjuvants

Special considerations

- Application equipment availability
- Method of delivery: type of equipment and technique being used to apply pesticide
- Current and anticipated weather conditions
- Previous pesticide applications to the site and the interval between treatments
- Possible development of pest resistance to a particular management method or material (ensure the optimal amount of pesticide consistent with the label be used to reduce the potential for development of pest resistance and to minimize the frequency of applications necessary to control the target pest)
- Product rotations with differing modes of action rather than relying on a "one material fits all" approach to avoid pest resistance
- For natural area invasive plant removal, the presence of nesting birds in area to be treated

Following are some considerations to make before beginning an application to assure the proper amount of pesticide is mixed.

- 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

When applying the pesticide use the following procedures to reduce and safely store the rinse solution. These are secondary to label information and state and federal regulations.

- Mix only enough pesticide solution to do the job that day.
- Use up all pesticide, applying until the tank is empty, or no more solution is coming through the nozzle.
- If pesticide mix remains in spray equipment at the end of the work day clearly label the contents, affix to the tank or sprayer all legal labels for the products used. Also mark the current concentration for each product, the date and the name of the applicator.
- When resuming spray applications at a future date, either use the leftover material, or add dilution water and circulate the mix thoroughly before adding new concentrate.
- If spray tank rinsate is created, store the rinsate as make-up water for the next day. The next day's pesticide should be compatible or the same. The same labeling requirements described above pertain to the rinsate mix as well.
- Rinsing and/or cleaning of the sprayer may be necessary if the following conditions apply: it is necessary to use a pesticide incompatible with that previously used, or before long term storage of the equipment.

SECTION 5: PESTICIDES APPROVED FOR USE BY METRO PERSONNEL

PURPOSE

This section establishes the oversight procedures and selection process of pesticide materials for use at Metro facilities, parks and natural areas.

BACKGROUND

Pesticides vary widely in their characteristics and their legally labeled uses. Not every registered pesticide will be appropriate for use. Also, certain pesticides may be suitable for one kind of site or purpose but not for others. For example, managing for native grasses in large prairies may require the use of broadleaf specific herbicides. These same broadleaf-specific chemicals would not be the best choice for managing a grass lawn in a developed park, school yard or home garden because other techniques or less toxic chemical options are available. Pesticides must be carefully evaluated for their suitability for specific program use before they are included on an approved list. For LEED certified buildings any pesticide that meets San Francisco's Tier 3 hazard criteria is considered a least toxic pesticide (<http://www.tier3pest.com/>). Program needs for various pesticides change over time as new pest challenges arise. Also, pesticide material availability changes as products, active ingredients and label uses are added or removed. Information about pesticides may change over time and this may influence their suitability for program use. For these reasons, approved lists need to be flexible allowing for additions and deletions.

Integrated pest management principles show that it is more desirable to have a specialized selection of products that target specific pests, than a smaller number of general-purpose pesticides. This aids in limiting the effects of the control to the target pest only. It also may aid in reducing the number of resistant pests that can arise from continued use of a small number of controls, and thereby leads to an overall reduction of pesticide usage required.

PROCEDURE

Pesticides approved for use by Metro personnel on Metro property shall be listed in the approved chemicals list (Appendix A). **The list of chemicals in Appendix A have not been formally vetted and approved by the integrated pest management working group; rather they are conditionally approved, current use chemical lists. Metro staff should only apply chemicals from the conditionally approved current use list for their program. The working group will spend the next year reviewing and refining these lists in collaboration with affected staff and managers in each program. Approved chemical lists will be finalized after this effort.**

Requests by staff to add products to the approved lists are made by submission of a "Request for addition to approved chemical list" form (see Appendix B) to the integrated pest management working group. This request will include information regarding the product and its characteristics, expected uses, comparative costs and how the product will improve the integrated pest management program. The working group will then research the product's characteristics, including toxicological, environmental and physical properties. All aspects of potential use of the product and possible impacts to park users, park infrastructure and the environment will be examined. Proposed additions and deletions from the lists shall be approved by the working group.

Once approved, the product will be placed on the approved chemicals list and staff informed of the addition. Deletions of products will be made known to staff as soon as practicable. A pesticide deleted from the general approved list but placed on the “use up do not restock” list is approved for use within specified units until current supplies are exhausted unless otherwise noted. Metro will comply with all federal and state laws addressing use of pesticides. Loss of federal or state registration for a pesticide will result in its automatic deletion from the approved chemicals list, without the need for approval of the working group, following the schedule set by law. The working group will choose pesticides for the approved chemical list after assessing toxicological impacts, environmental impacts, efficacy, feasibility, cost and all other pertinent aspects of their use within an integrated pest management approach. Only pesticides from the approved lists shall be used.

Metro expects strict compliance by all staff, contractors and vendor applicators to all pesticide label requirements concerning safe, legal and effective use of pesticides.

SECTION 6: NOTIFICATION OF PESTICIDE USE AT A SITE

PURPOSE

This section establishes notification procedures for each application of chemical or biologically derived pesticides by Metro personnel and contractors at Metro facilities, parks or natural areas.

BACKGROUND

Metro understands that facility, park or natural area users may want to be informed of treatments. Label requirements for pesticide applications may also mandate that entry to treated areas be avoided for a specific time interval. Visitors may also seek additional information about pest management activities occurring at a facility or site. To satisfy these needs, all pesticide applications will be accompanied by on-site notification signage.

PROCEDURE

Metro intends to inform site visitors of pesticide application through the use of notification signs. Applicators will post these signs immediately before an application begins in clearly visible locations. The intent of the signs is to allow the public to encounter the signs prior to entry to a treated area during or after an application, and so they have the opportunity to avoid this area. Signs do not need to be posted in areas where the public will not come in contact with an application. This notification signage will include basic information about the application and appropriate contact numbers for those desiring more details about the pest problem and the approach being used. For examples of Metro natural areas signage see Appendices C and D. Other programs, venues or facilities should develop signage that includes language and graphics that meet the criteria of their interpretive plans or signage standards.

Re-entry specifications will be listed on notification signs if required by the label. Employees or contractors will remove the signs after the re-entry specification has been met. For most products, this interval is limited to when the liquid application has dried or until any dust has settled from a dry or granular application.

As a convenience for community centers, schools and day care facilities in session, these entities should be notified in writing before an application is made to nearby adjacent properties. School or community center personnel can then schedule the activities of their users accordingly. The notification letter or its equivalent shall be delivered to the school or community center 24 hours before any applications of pesticides are planned to take place.

SECTION 7: USING PESTICIDES ON METRO PROPERTY

PURPOSE

This section establishes procedures for application of pesticide materials by Metro personnel and contractors.

BACKGROUND

As part of Metro's integrated pest management program, employees and contractors will apply pesticides in a legal manner and strictly follow all precautionary requirements for their use. This section outlines procedures for pesticide application at facilities, parks and natural areas maintained by Metro employees or contractors. All registered pesticides are accompanied by a legal label specific to each product that defines all legal uses. All Metro employees and contractors must use pesticides strictly according to these label directions.

PROCEDURE

The label is the law and shall be followed strictly. In addition:

- Personal protective equipment shall be used wherever indicated on the label of the product and/or on the safety data sheet for the product.
- Spray equipment shall be maintained in a safe and useful condition and shall be calibrated regularly.
- Anti-siphoning devices shall be used when filling large spray tanks.
- Pesticides used shall be chosen from the approved chemicals lists as provided to the appropriate work units.
- Employees and contractors shall apply pesticides only in appropriate weather conditions and consider all other relevant criteria from Section 4.
- Employees and contractors applying pesticides shall post notification signs where pesticides are being applied, as stated in Section 6.
- Metro employees and contractors shall record all pesticide applications on Metro approved application record forms (Appendix E).

The law allows a licensed applicator to:

- Apply a pesticide at any dosage, concentration or frequency listed on the label
- Use any equipment or method of application not prohibited by the label
- Mix a pesticide or pesticides with a 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 rates and if not specifically prohibited by the label

Pesticide may be used only on sites and targets stated on the label. Higher dosages, higher concentrations or more frequent applications than the label allows are not permitted. All employees and contractors applying pesticides must strictly follow label directions for use, safety, mixing, diluting, storage and disposal, as well as any restrictions on re-entry.

Using pesticides at Metro

The following steps shall be taken when using pesticides on Metro property:

- A Metro employee or contractor identifies or is informed of a pest problem.
- Identify the pest.
- Determine if actions need to take place. Thresholds and action levels are determined by a licensed applicator or licensed supervisor for the specific pest problem in question.
- Management strategies are determined by a licensed applicator. Special situations may require expertise from outside Metro such as university diagnostic laboratories.
- Prioritize cultural, mechanical and physical and biological management methods as part of an integrated pest management approach, as explained in Section 3.
- Choose the pesticide using the "Criteria for choosing a pest management method" summarized in Section 4 and the approved chemicals list for the appropriate work unit.
- Check application equipment for safety and mechanical problems; calibrate if necessary.
- If applications are outdoors, check label for appropriate application situations and appropriate wind conditions to prevent pesticide drift and volatilization. Applications should be done when suitable wind conditions exist to minimize drift. Adjustments should be made for spray droplet size and pressure if and when conditions warrant. No application should take place where there is unacceptable drift.
- Post notification signs before use to inform the public of the application. For specific rules, see Section 6.
- List re-entry specifications on the signs if required by the label.
- Apply material according to the label and in accordance with state and federal regulations.
- Record applications of pesticides on the approved forms. See appendices.
- Remove signs after the label designated re-entry requirements have been met. This is usually when the liquid pesticide has dried, unless indicated otherwise on the label.
- Evaluate the results of management measures.

SECTION 8: PESTICIDE APPLICATION RECORD KEEPING

PURPOSE

This section establishes recording and reporting procedures for all pesticide applications taking place at Metro facilities, parks and natural areas by licensed Metro personnel, or any other agency, bureau, company or individual pursuant to a contract or intergovernmental agreement. No volunteers are permitted to apply pesticides to Metro property.

BACKGROUND

Detailed record keeping is an essential part of integrated pest management program implementation, and is vital in communicating, reporting and analyzing the effectiveness of pest management activities. State law requires that written records be kept for pesticide applications. The law requires that licensed applicators record the details of pesticide applications and keep these records for three years. These records must be stored in a central location and be available for review.

PROCEDURE

A key goal of Metro's integrated pest management program is to have consistent, quality records of all pesticide applications performed across Metro facilities, parks and natural areas. It is the responsibility of each department to track and report chemicals applied at each site. In the future Metro will develop a centralized reporting system/database. In the meantime, Metro will provide appropriate forms to its employees and contractors. Each application requires the applicator to complete a pesticide application form. Each operating unit shall keep a record of pesticide applications by their own personnel for no less than three years.

Information regarding application of pesticides to park lands by non-Metro personnel shall also be recorded including all information fields required by the Oregon Department of Agriculture. A pesticide record must include a separate form for each pesticide application by a Metro employee:

- The location of the land or property and specific area where the application was made*
- Total area treated if applicable
- Date and approximate time (start and end of application)*
- The supplier of pesticide products applied*
- The trade name and the strength of the pesticides applied and EPA number of pesticide*
- The amount of concentration* and total amount of mixture applied
- Summary information of device or apparatus used*
- Name and license number of applicator, apprentice or trainee* (whether the applicator is Metro staff or employed by a Metro contractor)
- Temperature and wind conditions
- Target pest or weed*
- Aquatic buffer designation where applicable
- Records kept for three years*

**** Denotes Oregon Department of Agriculture Application Record Requirement***

Refer to Oregon Pesticide Application Record Requirements (<http://www.oregon.gov/ODA/PEST/docs/pdf/recordkeepingrequirements.pdf>) for specific Oregon Department of Agriculture record keeping requirements.

Applications on different dates or at different locations must have their own application record. They cannot be combined on one record. See Appendix E for examples of Metro's pesticide record keeping form.

SECTION 9: PESTICIDE APPLICATION BY NON-METRO EMPLOYEES AND CONTRACTORS

PURPOSE

This section establishes oversight procedures over all pesticide applications taking place at Metro facilities, parks and natural areas. Anticipated applications by non-Metro employees and contractors must undergo an approval process to satisfy certain licensing and other requirements before the work can take place. This oversight is essential to ensure that all pest management activities occurring at Metro facilities, parks and natural areas adhere to established integrated pest management-based goals and principles and address environmental and safety concerns.

BACKGROUND

Without proper oversight, pest management activities undertaken by non-Metro personnel may lead to regulatory, environmental or safety problems. Metro infrastructure, landscapes and the public may be put at risk, or integrated pest management principles may not be followed. The approval process within this manual is not intended to be a hindrance to appropriate and timely work. These procedures are intended to ensure that the best practices are used and problems avoided.

PROCEDURE

Contractors, partner organizations, state and county agencies desiring to apply pesticides not on the approved chemical list to Metro land or facilities shall submit a "Request for addition to approved chemical list" form (Appendix B) to the integrated pest management working group. The working group will evaluate the request before any additional pesticide application can take place. If the working group cannot agree whether to approve the chemical, approval will be at the department director's discretion. Members of the working group who disagree with the director's decision may take their concern to the Metro Chief Operating Officer.

Employees of commercial pesticide operator companies

Employees of commercial pesticide operator companies must possess valid state pesticide applicator licenses at the time of planning and application of pesticides. The applicator license in the state-defined category appropriate for the particular application is required. Per state law, any contract staff operating under a "Trainee License" must be under the direction of a licensed commercial pesticide applicator.

Metro project managers shall regularly review the performance record of contracting businesses applying pesticides to Metro facilities, parks and natural areas. This review shall include an

examination of past work and safety performance. All involved parties shall disclose pertinent information regarding any performance or safety issues raised from prior projects.

Employees of partner organizations

Employees of partner organizations possessing valid state pesticide applicator licenses are permitted to apply pesticides on Metro property if under the direction of licensed Metro staff. The applicator license in the state-defined category appropriate for the particular site is required.

Employees of state agencies

Situations may occur where state agencies need to apply pesticides to Metro facilities, parks and natural areas to perform early detection and control of invasive species. Metro is supportive of early detection and rapid response to serious invasive species threats, and communications from the state regarding its need for pesticide use for these purposes will be responded to by Metro in a timely manner.

Employees of county vector and nuisance control agency

Metro understands that there may be situations where the county vector and nuisance control agency has the need to apply pesticides to Metro property as part of its mandate to further public health goals. The integrated pest management working group shall respond to communications from this agency in a timely manner. Licensed public health endorsed applicators will be considered for approval to apply pesticides to Metro facilities, parks and natural areas. Metro and the county will work together to arrive at mutual agreements for activities that address public health goals and good environmental stewardship. These agencies include:

- Multnomah County Health Department, Vector Control Division
- Washington County Department of Health and Human Services
- Clackamas County Vector Control District

SECTION 10: STORAGE AND TRANSPORTATION OF PESTICIDES

PURPOSE

This section defines the method and procedure for storage of pesticide materials for all Metro locations and personnel.

BACKGROUND

Attention to the proper storage of pesticide material is vital to assure public and employee safety, as well as to protect the investment in their purchase. Several agencies are involved in regulating aspects of pesticide storage. No single agency has comprehensive authority. Pesticides will be stored and transported in a manner that reduces the risk of spills, exposure, theft, degradation, contamination or loss.

PROCEDURE

Pesticides or pesticide containers shall be kept in secure and safe locations in accordance with existing laws and in a cabinet specifically designed for chemical storage. They shall be kept in a

temperature controlled, well-ventilated area. Areas used for storage shall be labeled and designated for use by work unit supervisors.

Pesticides shall be safeguarded from environmental damage such as extreme temperature, photo-decomposition or moisture. All pesticides in storage shall be inspected regularly and, if necessary, rotated to ensure that the oldest items are used first.

Pesticides being transported shall be appropriately and safely secured in the vehicle. (Only licensed applicators shall transport pesticides.) Appropriate spill response supplies must be immediately available.

Pesticides shall not be transported in the cabs of passenger vehicles when alternatives exist, such as truck beds, truck boxes or vehicle trunks.

SECTION 11: USE OF REMAINING PESTICIDE SOLUTIONS AND RINSES

PURPOSE

This section establishes procedures for the use and disposal of any pesticide remains generated by Metro employees. It outlines methods for use of remaining pesticide solutions and rinses in a legal and safe manner.

BACKGROUND

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. It is the goal of Metro to conduct pesticide operations so that disposal of remaining material is not necessary.

PROCEDURE

Pesticide solutions and rinses should be applied according to the label directions, and to legal target sites so there are no pesticides remaining. This shall be accomplished by accurately gauging the amount of pesticide needed for the job. Metro 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, rinse equipment only at the end of the spray cycle or when changing to pesticides that are incompatible with those in the tank. It is a legal requirement to fully and legally label all tanks and sprayers containing leftover pesticides at the end of each day.

- Read the pesticide label. The following procedures should not conflict with label information or state or federal regulations. Contact your supervisor if you see a conflict or have questions.
- Wear protective clothing as listed on the label when handling pesticides, pesticide containers or pesticide equipment.
- Fill the spray equipment approximately 1/4 full with clean water. 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 labels.
- 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.

- If the tank is to be stored, repeat steps 3 and 4 above until the tank is clean.

SECTION 12: DISPOSAL OF EMPTY PESTICIDE CONTAINERS AND UNUSABLE PESTICIDES

PURPOSE

This section defines the method and procedures for the disposal of pesticide containers and unusable pesticides or those pesticides with registrations that have been totally or partially suspended.

BACKGROUND

Metro considers proper disposal of unusable pesticides and pesticide containers of the utmost importance to the safety of employees, the public and the environment. Several governmental agencies regulate pesticide disposal. No one agency has comprehensive authority. Agencies involved include the Oregon State Department of Agriculture, Department of Environmental Quality, Environmental Protection Agency and Occupational Safety and Health Administration. Metro will comply with all relevant laws governing the proper disposal of these materials.

PROCEDURE

Metro shall dispose of pesticides and empty pesticide containers in accordance with all state and federal regulations and label recommendations. Disposal of pesticide containers and unusable pesticides not in accordance with this manual will be cause for disciplinary action.

The following steps should not conflict with pesticide label information or state and federal regulations. Contact your supervisor if you determine a conflict or have other questions. Always wear protective clothing when handling pesticides or pesticide containers, as directed on the label.

Storage of non-rigid containers including bags, sacks, and boxes

- Pesticide material must be emptied into application equipment to the extent made possible by physical agitation of the container.
- Visually verify that residues have been removed.
- Multiple-rinse non-rigid containers such as paper lined with plastic or foil.
- Place in a plastic bag and mark as to contents.

Storage of rigid containers such as plastic, glass, or metal

- Pesticide material must be emptied into application equipment to the extent possible by pouring, then visually verifying that the residues have been removed.
- The container must be rinsed with clean water until clean; the rinse water poured into the spray equipment. Empty the pesticide and all rinsates into the sprayer before the full amount of diluting water is added to the spray equipment.
- Replace lid firmly on the container and place in a plastic bag and mark as to contents.

Storage of empty containers

Containers must be stored in plastic bags in a secure area until they can be taken to a Metro transfer station. Containers do not need to be processed as hazardous waste and should be processed through the standard waste stream.

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; or 3) have visually changed their composition or structure in some manner.

- The integrated pest management working group shall be informed of plans to dispose of pesticides and of results of the disposition.
- The working group representative from the department wishing to dispose of a pesticide will contact the Oregon Department of Agriculture, the manufacturer or dealer and/or a licensed consultant and find out if the product is still usable.
- If the pesticide has less activity due to long storage, moisture or freeze damage, follow the recommendations of the dealer, manufacturer or licensed consultant and use procedures in this section as they apply. The pesticide could be applied as a regular pesticide with the applicator being aware that full control is not achievable as the damaged pesticide may not be as effective as a pesticide that is within its expiration date.
- If a pesticide cannot be disposed using the guidelines listed above or by following the recommendations of the dealer or manufacturer or licensed consultant, it may be necessary to arrange for disposal of the pesticide in a manner recommended by a Metro regional waste facility.
- The integrated pest management is responsible for arranging for the disposal of pesticides. A record of these disposals should be kept on file for three years.

Disposal of pesticides with totally or partially canceled registrations (or those which have been removed from approved use by Metro)

If unusable pesticides remain in stock, Metro will follow recommendations of the regulatory agencies, manufacturer or dealer in finding a legal user for the pesticide. If the pesticide is unopened and/or still retains its integrity it may be possible to transfer the pesticide to a legally registered bureau, agency or group to use.

SECTION 13: USE OF PROTECTIVE CLOTHING AND EQUIPMENT

PURPOSE

This section outlines the requirements for the use of protective clothing and equipment by Metro personnel when undertaking pest management activities.

BACKGROUND

Use of pest management tools, equipment, and materials may require the use of personal protective equipment. Use of such equipment is necessary to provide an adequate measure of safety for the

applicator. This equipment may be clearly defined in legal pesticide label directions or directives in equipment manuals. When such directives exist they must be followed. Use of appropriate equipment may not be so clearly defined for all pest management methods, and in such cases it is the responsibility of the applicator and the supervisor to determine and employ adequate safety equipment.

PROCEDURE

Personnel engaged in the use of pest management tools, equipment or materials shall follow all clothing and equipment requirements required to ensure their safety. When using pesticides, the label directives for use of personal protective equipment must be followed. Use of related power and mechanical equipment must be accompanied by appropriate equipment as determined by equipment manuals or supervisor's directives.

Required personal protective equipment appropriate to satisfy specific pesticide label requirements shall be provided by Metro to employees for their use. These may include, but are not limited to respiratory protection, eye protection, face shields, coveralls, rain gear, mixing aprons, chemically resistant boots and gloves. Time will be made available during the work shift to wash up before lunch and at the end of the work shift. The applicator is responsible for cleaning, storing and maintaining all personal protective equipment in a safe and useful manner. Single use equipment shall be disposed of in accordance with applicable local, state and federal laws.

SECTION 14: EMERGENCY INFORMATION CONCERNING ACCIDENTAL PESTICIDE EXPOSURE

PURPOSE

This section establishes procedures for the proper response to employee and citizen inquiries regarding accidental exposure to any pesticide material used by Metro employees. It defines Metro's response to inquiries concerning adverse health effects as a possible result of accidental exposure to pesticides.

BACKGROUND

Metro's handling of public inquiries should be prompt, professional and well supported. While Metro can answer general questions, Metro does not have medical professionals on staff to address specific medical questions relevant to accidental exposure. This expertise is readily available in the health care community. Therefore, concerns of this nature will be referred to qualified medical personnel for resolution.

PROCEDURE

In response to a non-emergency inquiry

- Respond to questions to the best of your ability.
- Refer detailed or technical questions to the integrated pest management working group.
- Inform your supervisor.

Metro will inform applicators of proper procedures to be taken in case of pesticide exposure. Anyone inquiring about pesticide exposure will either be referred to emergency services by dialing 911 if appropriate, his or her own personal physician, the Oregon Poison Center, or the Pesticide and Analytical Response Center. A list of these authorities and their phone numbers follows:

Contacts for medical emergencies and immediate health concerns

Emergency service	Telephone number
Fire, Ambulance, HAZMAT	911
Oregon Poison Center – 24 hours, Portland area	503-494-8968
Oregon Poison Center – 24 hours, outside Portland area	1-800-222-1222
DEQ Northwest Regional Office	503-229-4263
Oregon Emergency Response System	1-800-452-0311
National Response Center	1-800-424-8802
CHEMTREK (an industry emergency spill information service)	1-800-424-9300

Safety data sheet information about all hazardous substances in the workplace will be made available to all personnel. This information includes symptoms of exposure and procedures for handling overexposure to individual pesticides. If symptoms of illness occur during or shortly after applying pesticides, the Oregon Poison Center should be contacted or the individual should receive medical attention immediately.

Non-emergency questions received by Metro shall be referred to a member of the integrated pest management working group, who will provide information or a referral to qualified individuals or sources for further information.

Procedures

- Use planning to avoid emergencies and to expedite aid should an accident occur.
- Be informed of the symptoms of exposure and the decontamination steps necessary in case of accidental exposure.
- Use all safety procedures and protective gear as recommended on the label.
- Have a copy of the appropriate label available when applying or transporting pesticides (concentrated and dilute.)

In case of a medical emergency related to suspected pesticide exposure

Handle any emergency situation as per first aid instructions on label and safety data sheet. Call for emergency backup if necessary.

- Contact the Oregon Poison Center: **1-800-222-1222**
- Take the label and safety data sheet for medical personnel reference if it is necessary to leave the site.
- Inform your supervisor as soon as possible.
- Inform the integrated pest management working group or manager as soon as possible.

SECTION 15: PESTICIDE SPILL RESPONSE

PURPOSE

This procedure is intended to cover pesticide spills, both on Metro property and in transport. In any emergency involving hazardous materials, take immediate necessary action to protect life, safety and the environment.

PROCEDURE

Immediate actions

- If there is an injury, pesticide exposure or fire, call 911 immediately for assistance.
- Assist injured people.
- Remove contaminated clothing immediately. Use eyewash, emergency shower or other source of water to decontaminate the individual.
- If there is a pesticide exposure, obtain the product label and have it ready for medical responders.
- Determine whether there is an imminently hazardous situation that you can take steps to correct. For example it may be appropriate to move a vehicle away from a waterway or heat source.
- If in a vehicle, pull it off the roadway to a secure location if possible.
- Keep bystanders at a safe distance using barrier tape or other means.
- If there is a spill on the roadway set up reflectors or other traffic control devices to divert traffic. Notify ODOT: 503-283-5859.
- Assess the situation. Determine if you are able to clean up the spill with the supplies and helpers that you have immediately available. Take into account the volume and hazardous properties of the product spilled.
- Notify your supervisor or manager.
- Determine if the spill requires notification of state or federal authorities (see below).

If you are not able to clean it up:

- Make contact to obtain assistance. If you are not able to quickly obtain the required supplies and assistance from co-workers or Metro Hazardous Waste Program staff, call 911 to obtain help from the local hazmat team.
- Stay a safe distance away and take defensive action to prevent further spread, such as placement of absorbent booms.

If you are able to clean up the spill, proceed to spill control steps below.

Spill control and cleanup

- If at any time the spill begins to react, heat up or becomes too large or otherwise unsafe to clean up, immediately stop, evacuate and call for assistance.
- Put on proper protective equipment based on the hazards of the material.

- Clear and secure the area and take defensive steps to block or contain the flow of materials to the environment (soil, water, storm drains and sewer drains).
- If the spill is from a leaky container, position the container to prevent additional spillage. If possible, patch the container with duct tape, plug holes with a rag, and/or place the container in secondary containment, such as a plastic bag or pail.
- For dry material, carefully sweep up the pesticide to minimize dust.
- If the spill is liquid, contain the spill by placing absorbent or booms around the edges. Working from the outside towards the center, pour absorbent over the spilled liquid. Using a broom, dustpan or other tool, mix the absorbent into the spilled material.
- Thoroughly sweep all material into a sealed plastic bag or other sealed container. Clearly label the container. Wash or dispose of the broom.
- Remove protective equipment, keeping contamination away from your body. Clean hands and face with wipes.
- Put contaminated disposable protective equipment in a plastic bag for disposal. Put contaminated non-disposable protective equipment in a bag for later decontamination.

After the incident

- If there is any remaining contamination of soil or anything else in the area, consult your supervisor about additional cleanup needed.
- Dispose of spill cleanup residues. Consult with Metro Hazardous Waste staff for advice on proper disposal. If the material needs to be disposed of as hazardous waste, it can usually be brought to one of Metro's facilities at no cost.
- Complete a Pesticide Spill Incident Report and provide a copy to your supervisor.
- Clean contaminated equipment and restock spill response supplies.

Spill response equipment

The following items must be immediately available to all persons applying or transporting pesticides:

- A binder that includes:
 - Chemical labels for materials being transported
 - Safety data sheets for chemicals being transported clipped to front of binder
 - Pesticide Spill Response Procedures and Incident Report form
 - A Department of Transportation Emergency Response Guidebook
 - Emergency phone numbers
- A cellular phone, if there is the potential of a spill occurring that would require assistance.
- Personal protective equipment appropriate for handling the pesticides being applied or transported in the event of a spill. Bring extras in case of contamination, tears, etc.
- An eyewash either on the truck or on site and immediately available in the case of an emergency.

- Tools and supplies to make repairs to containers and application equipment and to stop leaks.
- Tools for picking up spilled material. Depending on the formulation this may include absorbent material, broom and dustpan, or shovel.
- Plastic recovery bags and ties for the material and for contaminated personal protective equipment.
- Optional equipment and supplies, depending on type of pesticide, volume and whether it is in transport:
 - Bagged absorbent
 - Absorbent booms, dikes, pillows and towels
 - Squeegee
 - Whisk broom
 - Dust pan
 - Hard bristle brush to loosen material
 - Duct tape for temporary repair
 - Patching material
 - Quill and hose
 - Warning tape, signs
 - DOT reflectors
 - Bucket
 - Flat and pointed shovels
 - Flashlight
 - Safety vests
 - Tools: hammer, box knife, screwdriver
 - First aid kit
 - Waterless soap, moist wipes

When to notify state/federal authorities

Oregon and federal law requires reporting certain spills of hazardous materials or waste. When in doubt, it is best to report.

The reporting requirement **does not** apply for spills that meet all three of the following conditions:

- The spill occurs on public or private property and is known to the person having control over hazardous materials
- The spill occurs on a surface impervious to the hazardous materials spilled
- The spill is completely cleaned up without further incident

Spill reporting **is required** if these three conditions are not all met, **and** the spill exceeds any of the following in a 24 hour period:

- Two hundred pounds (25 gallons) of concentrated pesticide residue

- An amount equal to or greater than the quantity listed in 40 CFR Part 302 – Table 302.4 (List of Hazardous Substances and Reportable Quantities) and amendments adopted prior to July 1, 2002; these spills must also be reported to the National Response Center, 1-800-424-8802
- Ten pounds or more of a hazardous material not otherwise listed as having a different reportable quantity by the department or the United States Environmental Protection Agency on the list of hazardous substances in 40 CFR 302.4
- Other thresholds apply for oil and other non-pesticide spills

For spills of mixtures or solutions, the regulation calls for reporting if the total quantity of hazardous materials in the mixture or solution, in pounds, exceeds the reportable quantity of the hazardous material with the lowest reportable quantity.

The regulation also call for reporting of threatened spills or releases, defined as, “circumstances or events exist that indicate a spill or release of oil or hazardous materials is likely and imminent.”

Reporting

Qualifying spills must be reported to the Oregon Emergency Management Division, 1-800-452-0311. Information to have on hand when reporting a spill:

- Your Name
- Who you work for
- Phone number
- Location of spill
- Material spilled and quantity
- Time spill occurred
- Is the spill contained?
- Is the spill likely to enter a body of water?
- Who has been notified
- What is being done to clean up the spill

CONTACT PHONE NUMBERS

Emergency service	Telephone number
Fire, Ambulance, HAZMAT	911
Oregon Poison Center – 24 hours, Portland area	503-494-8968
Oregon Poison Center – 24 hours, outside Portland area	1-800-222-1222
ODOT	503-283-5859
Metro South hazardous waste facility (Oregon City)	503-655-0480
Metro Central hazardous waste facility (NW Portland)	503-223-8133
Metro safety specialist	503-797-1937
Oregon Emergency Response System	1-800-452-0311
National Response Center	1-800-424-8802

SECTION 16: WORKER PROTECTION STANDARDS

BACKGROUND

The federal Worker Protection Standard is designed to protect employees engaged in pesticide application from occupational exposure to pesticides. It contains requirements for notifying employees of applications, the use of personal protective equipment and restrictions on entry into treated areas. Specific personal protection equipment information is available on the product label and in the safety data sheets. Personnel who have any contact with pesticides shall follow all personal protective equipment requirements.

PROCEDURE

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

SECTION 17: WATERWAYS PEST MANAGEMENT

GOALS AND PHILOSOPHY

Metro recognizes the special importance of the 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. It establishes clear guidelines and limitations regarding maintenance methods and materials for both these waterways and the lands adjacent to them. As in the rest of Metro's pest management program, integrated pest management principles will be employed in all landscape management decision making. Management of unwanted vegetation, diseases and pests will follow the integrated pest management decision making rationale:

- Proper planning and management decisions
- Cultural methods
- Mechanical means
- Biological methods
- Botanical and synthetic pesticides, using the least toxic and most effective pesticide for the task

MANAGEMENT PRACTICES, MATERIALS AND LIMITATIONS FOR WATERWAYS AND BUFFERS

Definitions

The **buffer zone** referred to in this section is defined as a corridor of land that is 25 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the edge of the water line at the time of application. Anticipated seasonal or weather-related changes affecting water level will be included in the decision making process when dealing with buffer zones.

Application equipment used

Pesticide delivery within buffer zones 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 kind 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 within a buffer zone, great care will be exercised in the process. Managing drift is of particular importance when surface waters are nearby. Equipment used in the application shall employ all necessary methods to limit drift. Nozzle size, pressure regulation, droplet size and height of spray wand, are all techniques that can be modified to reduce unwanted drift of pesticides.

Spray applications will not be allowed in the buffer zone when wind speed is above 5 mph, or wind direction or activity would carry pesticides toward, or deposit them, upon open water.

Materials available for tree injections in buffer zones

In the event a pest or disease threatens the health of important and valuable trees within a buffer zone, there may be a need to treat them. Instances of this occurring are rare. However, in these special cases, the use of injectable pesticides may be employed when necessary, with the following limitations. The pesticide applied must be delivered by methods that inject or otherwise distribute the material entirely within interior tree tissues. Pesticides will not be injected into the soil surrounding the tree. Tree surfaces will not be sprayed or treated with pesticides. The insecticides and fungicides used in these injection systems shall be approved by the integrated pest management working group. The intent and limit of this exception to the approved chemical list is to allow only the insecticides or fungicides necessary to combat direct threats to the health of valuable trees.

Changes to the procedure

A need may arise for modifications or additions to the Metro waterways procedure. There are several methods available to accomplish this. There may be situations where Metro cannot wait for the formal review process to take place. An example is the unlikely, but possible introduction of a new and destructive pest that needs to be treated within in a short time frame. In such a case, Metro representatives will develop an integrated pest management strategy to deal with the threat.

SECTION 18: NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT COMPLIANCE FOR PESTICIDE USE IN OR NEAR WATERWAYS

PURPOSE

The state NPDES weed and algae permit requirements are dependent on the treatment area and extent of the application by the agency. The Oregon state permit sets a threshold that, when exceeded, requires pesticide users to submit an application to the state for registration and pay fees among other requirements. For weed and algae control in water, these thresholds are set at 20 acres of surface treatment area or 20 linear miles of treatment area at water's edge. These thresholds refer

to the annual treatment area under the responsibility of a single landowner (such as land cared for by Metro) and combine any applications performed by any agency on that land. Therefore Metro and other agencies and contractors applying pesticides on Metro property must be included in any calculations assessing threshold. Treatments that do not exceed these thresholds result in more limited requirements, and do not need individual permit applications to the state.

PROCEDURE

- Determine annual area of pesticide applications on, in or within 3 feet of waterways. This will determine the threshold as being above or below 20 linear miles.
- Metro is covered under Oregon NPDES-issued permit for algae and weed control unless the Oregon state permits annual thresholds are exceeded.

If below the threshold, Metro needs to comply with the state permit by:

- Using designated DEQ and general integrated pest management methods to manage and track weeds.
- Not applying a pesticide into water or that may reach water if that water is already impaired by that pesticide or its by-products.
- Notifying drinking water suppliers about pesticide applications when the pesticide label has potable water use restrictions and the setbacks or concentration levels on the label will not be met.

The discharge of pesticides shall be minimized by:

- Using an optimal amount of pesticide
- Calibrating and maintaining equipment
- Reducing spills and leaks (even when mixing and loading equipment)
- Assessing wind, water temperature and other environmental conditions to ensure proper application.

The following documents shall be maintained for three years

- A copy of the permit <http://www.deq.state.or.us/wq/wqpermit/genpermits.htm>
- Documentation of amount of surface area or linear miles treated in a calendar year (including contractors and internal employees); an internal process for tracking contractor applications on, in or near waterways shall be developed
- Documentation of an adverse incident, spill or potential adverse incident that is not reported
- Pesticide applicator records as required by Oregon Department of Agriculture or U.S. Department of Agriculture

Metro receives automatic coverage and only needs to download a copy of the permit and adhere to the terms listed in order to satisfy permit terms. We do not need to formally register for permit coverage.

APPENDIX A | APPROVED CHEMICAL LISTS

METRO REGIONAL CENTER

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Burn Out II	Clove oil, citric acid	Non-selective control of herbaceous broadleaf and grass weeds; use safely around trees and shrubs	
2	The Pantry Pest Trap	Pheromone	Certain moths	

PORTLAND EXPO CENTER

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Ranger Pro	Glyphosate	Various weeds and grasses	
2	Sim Trol	Simazine	Various weeds and grasses	
3	Cross Bow	Triclopyr+2,4-D ester		Blackberry
4	Pendulum 2G	Pendimethalin	Various weeds and grasses	

METRO REGIONAL PARKS

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Kleen-up Pro	Glyphosate	Roadside weeds, gravel pads	
2	Garlon 32	Triclopyr	Invasive plants	Himalayan blackberries
3	Rodeo	Glyphosate		Japanese knotweed

OREGON CONVENTION CENTER

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Advion Cockroach Gel Bait	Indoxacarb		Roaches
2	Contrac Blocks	Bromadiolone		Rodents
3	Detex			Rodents
4	Invade Bio Foam			Flies
5	Microfoam			Flies
6	Sniper	Chlorine dioxide	Decontamination for bacteria from rodent droppings	
7	Eeagle 20EW	Myclobutanil	Fungicide for dogwoods/powdery mildew	Dogwoods
8	Lada 2F Imidacloprid	Imidacloprid		Insects
9	M-pede	Potassium salts of fatty acids	Fungicide control for aphids/powdery mildew	
10	Prodiamine 65 WDG	Prodiamine	Pre-emergent for weed control	
11	Prograss Blend 19-1-6 organic fertilizer		Organic fertilizer	
12	Roundup Pro	Glyphosate	Weed control	
13	Roundup QuickPro	Glyphosate	Weed control	
14	Scythe	Palargonic acid/related fatty acid	Weed control	Moss
15	Sedgehammer	Halosulfuron-methyl		Nut sedge
16	Vista XRT	Fluroxypyr 1-methylheptyl ester	Lawn moss, insect weed control	Moss
17	Tri Plet SF	2-4-D	Weeds	

METRO NATURAL AREAS PROGRAM

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Rodeo, Aquamaster, Accord	Glyphosate	Primary vegetation control product used to control invasive plants	Geranium robertianum (Herb Robert geranium), Alliaria petiolata (garlic mustard), Cirsium sp. (thistle), Impatiens glandulifera (policeman's helmet), Lythrum salicaria (purple loosestrife), Phalaris arundinacea (reed canarygrass)
2	Garlon 3A, Tahoe 3A	Triclopyr amine	Selective products for woody and difficult to control perennial invasive plants; used both in spray and cut stump applications	Buddleia sp. (butterfly bush), Ilex sp. (Holly), Cytisus scoparius (Scots broom), Prunus laurocerasus, Daphne laureola
3	Garlon 4, Tahoe 4E	Triclopyr ester	Selective products for woody and difficult to control perennial invasive plants; used both in spray and cut stump applications; basal bark applications for small diameter woody invasive plants	Buddleia sp. (butterfly bush), Ilex sp. (holly), Cytisus scoparius (Scots broom), Prunus laurocerasus, Daphne laureola
4	Habitat	Imazapyr	Japanese knotweed	Polygonum cuspidatum, hohemicum, sachalinense (Japanese knotweed)
5	Select, Select 2EC, Select Max	Clethodim	Selective post-emergent for invasive grass species in natural areas	Various non-native grasses in oak savanna and prairie systems
6	Fusilade, Fusilade DX, Fusilade II	Fluazifop-P-butyl	Selective post-emergent for invasive grass species in natural areas	Various non-native grasses in oak savanna and prairie systems
7	Poast, Poast Plus	Sethoxydim	Selective post-emergent for invasive grass species in natural areas	Various non-native grasses in oak savanna and prairie systems

OREGON ZOO

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Garlon	Triclopyr	Weed control	
2	Scythe	Perlargononic acid	Weed control	
3	Roundup Pro	Glyphosate	Weed control	Dandelions, Himalayan blackberry, Japanese knotweed, Tansy ragwort
4	Garlon 3A	Triclopyr	Weed control	Holly, Laurel, Himalayan blackberry, Clematis, woody material that suckers
5	Bonide	Neem oil, liquid copper		Lace bugs, white spot on Gaillardia
6	Round Up	Glyphosate	Weed control	Pendulum carax, False dandelion vetch, Plantain, Himalayan blackberry
7	Crossbow	2-4-D	Weed control	Blackberry, ivy
8		Neem oil		Whitefly, scale, mealy bug

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
9		Insecticidal soap		Whitefly scale, mealy bug
10		Surflan	Pre-emergent	
11		Treflan	Pre-emergent	
12		Oryzalin	Unwanted vegetation	
13		Metaldehyde		Slugs
14		2-4-D	Broadleaf weeds in turf	
15		Dicamba	Broadleaf weeds in turf	
16	Vantage	Sethoxydim	Selective grass killer	
17	Grass out	Clethodim	Selective grass killer	
18	Pro Sedge	Halosulfuron-methyl		Nutsedge
19	Bayer advanced	Tebuconazole, imidacloprid, clothianidin		Scale white flies
20	Grants sulfur	Sulfur		Mites
21	Bronners pure castile soap	Oils hydroxide	Insects; also to polish foliage	
22	Safers soap	Potassium		Aphids, mealy bugs
23	Copper tape	Copper		Slugs
24	Natular XRT	Spinosid		Mosquitoes
25	Altosid pellets	Methoprene		Mosquitoes
26	Altosid XR briquettes	Methoprene		Mosquitoes
27	Advance 375A	Avamectin B10		Ants
28	Advion ant gel	Indoxacarb	Primarily indoor treatment	Ants, odorous house ant and pavement ants
29	Advion cockroach gel	Indoxacarb	Primarily indoor treatment	Cockroaches
30	Demand CS	Lambda-Cyhalothrin 9.7%	Primary product for spraying for pests	Cockroaches, ants, wasps
31	Drione	Amorphous silica gel		Ground wasp or yellow jacket nests
32	Blue Max mini blocks	Defenthialone		Rats and mice
33	Zoecon Gentroii GR	Hydroprene		Cockroaches
34	Niban	Orthoboric acid		Ants
35	Onslaught	Esfenvalerate		Cockroaches, several types of flies
36	Phantom	Chlorfenapyr		Cockroaches
37	565 Plus XLO	Pyrethrins, piperonyl Butoxide, Octyl Bicycloheptene Dicarboximide	Stinging insects that need to be removed immediately	
38	Timbor	Disodium Octaborate Tetrahydrate		Termites
39	Generation miniblocks	Defenthialone		Rats and mice
40	First strike	Defenthialone		Rats and mice

ST. JOHNS LANDFILL

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Buccaneer Plus	Glyphosate	All vegetation	
2	Garlon 3A	Triclopyr	Broadleaf vegetation	
3	Spectracide Wasp & Hornet Killer	Prallethrin Lambda Cyhalothrin		Wasps, hornets, yellow jackets
4	Victor mouse traps			Mice
5	Bell Laboratories bait stations	Bromethalin		Mice

PORTLAND'S CENTERS FOR THE ARTS

	TRADE NAME	COMMON CHEMICAL NAME	TARGET DESCRIPTION	TARGET SPECIES/PEST
1	Current pesticide use is limited to household chemicals for the control of pests related to kitchen and facility operations.			

APPENDIX B | REQUEST FOR ADDITION TO APPROVED CHEMICAL LIST

REQUEST FOR ADDITION TO APPROVED CHEMICAL LISTS

All requests should include a copy of the label, MSDS and related documents.

Preparer's name: _____ Requester's name: _____ Date submitted: _____

Product name/EPA #: _____

Active ingredient(s): _____

Inert ingredients if known: _____

Target pest(s): _____

Request for inclusion in the following approved lists: _____

Expected uses: _____
(where, how much, frequency, special uses, etc.)

Does the product replace a currently approved pesticide? _____

Pesticide characteristics (attach additional information if necessary):

Toxicological: _____

Ecological: _____

Physical properties: _____

Environmental fate: _____

Use restrictions/Re-entry interval/PPE: _____

Comparative costs, efficacy, etc.: _____

Other considerations: _____

RESTORATION IN PROGRESS

AREA CLOSED

As part of Metro's work to restore a healthy native plant community, invasive weeds are being treated with approved herbicides by state-licensed applicators.

Thank you for your cooperation.

DATE AND TIME OF APPLICATION: _____

TARGETS

☐ General invasive weed species

☐ _____

PRODUCT USED

☐ Garlon 3A 62719-37

☐ Garlon 4 Ultra 62719-527

☐ Aquamaster 524-343

☐ Rodeo 62719-3245

☐ _____

For more information, call Metro's land management team at 503-797-1819.



RESTORATION IN PROGRESS

CAUTION

As part of Metro's work to restore a healthy native plant community, invasive weeds are being treated with approved herbicides by state-licensed applicators.

Treated plants may show signs of blue dye. Avoid areas that have been treated until the herbicide has dried.

Thank you for your cooperation.

DATE AND TIME OF APPLICATION: _____

TARGETS

☐ General invasive weed species

☐ _____

PRODUCT USED

☐ Garlon 3A 62719-37

☐ Garlon 4 Ultra 62719-527

☐ Aquamaster 524-343

☐ Rodeo 62719-3245

☐ _____

For more information, call Metro's land management team at 503-797-1819.



APPENDIX E | HERBICIDE APPLICATION REPORTING FORM

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov



APPLICATOR'S NAME:		LICENSE NUMBER:	WORK UNIT:
HELPER:			
LOCATION OF APPLICATION			
Date: (mm/dd/yy)		COMPLETE PESTICIDE NAMES, FORMULATIONS, EPA REG. NUMBERS	
Park or site:		MIX RATIO FOR EACH PRODUCT	
Time in:		Amount product/Amount water	
Time out:			
Temp:			
Wind:			
Pest: <input type="checkbox"/> General weeds <input type="checkbox"/> Weeds in turf <input type="checkbox"/> Specific weeds: _____ <input type="checkbox"/> Insect(s): _____ <input type="checkbox"/> Disease(s): _____ <input type="checkbox"/> Other: _____		Liquid products: total amount of dilute pesticide applied to site: Granular products: total number of pounds applied to site: Coverage rate for granular products: (e.g. 4 lbs./1,000 sq. ft.)	
Equipment used: <input type="checkbox"/> Backpack <input type="checkbox"/> Spotlyte type <input type="checkbox"/> Drop spreader <input type="checkbox"/> Spray truck number: _____ <input type="checkbox"/> Other describe: _____		Is this an application to an aquatic site or buffer zone? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, amount applied to Waterways Policy defined buffer or water:	

