



Lane Community College
Integrated Pest Management Plan

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1. Background/History

On June 24, 2009, the Governor of Oregon signed SB637 into law, which was then incorporated into ORS634.700 to 634.750. This legislation requires school districts and community colleges to adopt an integrated pest management (IPM) policy, and an integrated pest management plan that provides for the following:

- a) Designation of an IPM plan coordinator;
- b) Responsibilities of the IPM plan coordinator;
- c) A process for responding to inquiries and complaints;
- d) Provisions for conducting outreach to the school community about the IPM Plan; and
- e) Adoption of a low-impact pesticide list.

The statute requires the adoption of the IPM plan on or before July 1, 2012.

2. Lane Community College IPM Policy

On December 5th, 2012, the College Board of Education adopted Policy #D.170, Integrated Pest Management, in compliance with this legislation. The policy is provided for reference as follows:

To promote the health and safety concerns of students, employees and community members, the Lane Community College Board of Education shall adopt an integrated pest management plan (IPM) which emphasizes the least possible risk to students, employees and community members and shall adopt a list of low-impact pesticides for use with the IPM plan.

The IPM plan is a proactive strategy that:

1. Focuses on the long-term prevention or suppression of pest problems through economically and environmentally sound measures that:
 - a) Protect the health and safety of students and employees;
 - b) Protect the integrity of college buildings and grounds;
 - c) Maintain a productive learning environment; and
 - d) Protect local ecosystem health.
2. Focuses on the prevention of pest problems by working to reduce or eliminate conditions of property construction, operation and maintenance that promote or allow for the establishment, feeding, breeding and proliferation of pest populations or other conditions that are conducive to pests or that create harborage for pests;
3. Incorporates the use of sanitation, structural remediation or habitat manipulation or of mechanical, biological and chemical pest control measures that present a low-impact;
4. Includes regular monitoring and inspections to detect pests, pest damage and unsanctioned pesticide usage;
5. Monitors and evaluates the effectiveness of pest control measures;
6. Excludes the application of pesticides on a routine schedule for purely preventative purposes;

7. Excludes the application of pesticides for purely aesthetic purposes;
8. Includes education of college employees about sanitation, monitoring, inspection and pest control measures and prohibits the unauthorized possession and/or application of pesticides by employee and students.
9. Gives preference to the use of nonchemical pest control measures;
10. Allows the use of low-impact pesticides if nonchemical pest control measures are ineffective; and
11. Allows the application of a pesticide that is not a low-impact pesticide only to mitigate a declared pest emergency or if the application is by, or at the direction or order of, a public health official.

The college President shall designate the Integrated Pest Management Plan coordinator and give the authority for overall implementation and evaluation of the IPM plan.

3. Lane Community College IPM Plan

On October 12th, 2012, the College Board of Education adopted an Integrated Pest Management Plan for the college. The college's Integrated Pest Management Plan, also known as the IPM plan, is a plan intended for the purpose of achieving long-term, environmentally sound pest suppression through a systematic approach based on four basic priorities, where the use of pesticides is minimized or eliminated when feasible.

3.1 First Priority - Prevention

For example:

- a) Replacement or removal of pest-susceptible plants;
- b) Elimination or modification of problematic areas creating pest habitats;
- c) Storing food in containers with tight fitting lids;
- d) Regularly cleaning and disinfecting horizontal surfaces such as eating and food prep counters;
- e) Proper and adequate spacing of plant material to reduce pest and disease incidents;
- f) Maintain plant species diversity and eliminate monocultures in plantings;
- g) Excluding pests from buildings by sealing all exterior building envelope nonessential openings such as cracks and crevices, sagging soffits, adding door sweeps, and sealing around and under sinks.
- h) Return air vertical chase's located in columns or column assemblies around the perimeter of buildings shall be sealed completely from exterior environments.
- i) Fresh air or make up air openings must have louvers, screens, and other protective measures to prevent the intrusion of pests to building HVAC systems.
- j) Building air pressure shall be controlled such that exterior doors are not allowed or needed to be propped open or held open by building pressure.

3.2 Second Priority – Culture and Procedures

For example:

- a) Promote increased understanding of IPM basic principles and practices in the college community;
- b) Promote and encourage modification of human behavior to discourage pest incidents;
- c) Promote an increased understanding of what successful pest control looks like under

- IPM;
- d) Proper timing and use of water and elimination of drought and flood stress to promote plant health;
 - e) Proper timing and use of fertilization to eliminate over and under fertilization;
 - f) Aeration and/or over-seeding of turf and compacted areas.

3.3 Third Priority – Physical, Mechanical and Biological

For example:

- a) Use of biological products, including naturally occurring and introduced insect or disease parasitoids, predators, and microbial products;
- b) Use of sticky mechanical traps for insects and rodents;
- c) Removal of diseased, damaged, or dead wood from plants;
- d) Pruning and plant removal to promote air circulation and light penetration for healthier plant growth;
- e) Mulching of beds for weed reduction, water retention and winter protection;
- f) Removal of spent flowers on shrubs and annuals;
- g) Mechanical and manual clearing of vegetation in unimproved areas;
- h) Hand weeding in landscaped areas;
- i) Diligent removal and disposal of trash and debris;
- j) Using sterile insect techniques to prevent the spread of pests;
- k) Pheromone traps.

3.4 Fourth Priority – Chemical/Pesticides

In the event the IPM Coordinator (or designees) determines that prevention, culture, procedures, and biological/physical/mechanical strategies are ineffective, the use of an approved LOW IMPACT pesticide is permissible in conjunction with strict adherence to notification and posting requirements.

4. Pesticide Free Zones

(Exception: Immediate Health/Safety Threat per IPM Coordinator)

Pesticide Free Zones will be identified by signage at the building's main entrances. Due to the presence of young children, the flowing areas shall be designated as Pesticide Free Zones:

- a) Buildings numbered 24, 25, 26, 27, associated outdoor play areas, and surrounding landscape;
 - i) Bees and Wasps in close proximity to child care areas:
 - (1) If the nest site is not in a high traffic corridor, Long Tom Custom Sawmill or another such firm is contacted. This company collects stinging pests for resale. A collection date and time is arranged.
 - (2) If the nest site is located in a high traffic corridor and poses an immediate threat to the safety and health of the children, the IPM Coordinator for the college is contacted and may determine the best approach will be to physically eliminate the nest as quickly as possible.
 - (3) See also appendix 10

5. Leased Properties and Mixed-Use Zones

Those buildings and areas identified as leased properties and mixed-use zones shall be treated in accordance with the statute:

- a) ORS634.705 (2) “If a governing body has control over only part of a building, structure or property where a campus is located, the governing body may limit an integrated pest management plan to those parts of the building, structure or property over which the governing body exerts substantial control.”
- b) ORS634.705 (3) “A governing body is not required to adopt an integrated pest management plan for off-campus buildings, structure or property, notwithstanding **(despite)** any incidental use for instruction.”

For the purposes of this plan, “*substantial control*” means having responsibility for custodial, maintenance, and pest management duties in accordance with the lease or property usage agreement. Whereby, the lease or property usage agreement does not delegate one or more of these activities to the college (governing body), the college does not have “*substantial control*” in that respect. Those duties, for which the college does have responsibility, will be performed in accordance with the IPM Plan.

6. Roles and Responsibilities

6.1 College Board of Education

Under ORS634.705, the College Board of Education (governing body) is responsible for adopting an IPM Plan for the college AND adopting provisions for:

- a) Designating an IPM Coordinator;
- b) Identifying plan coordinator responsibilities;
- c) Giving notices under ORS634.740;
- d) Retaining pesticide application records under ORS634.750;
- e) Providing a process for responding to inquiries and complaints about non-compliance with the IPM Plan;
- f) Conducting outreach to the college community about the college’s IPM Plan; and
- g) Adopting a list of low-impact pesticides for use with the IPM Plan;
- h) Adopt IPM Plan revisions intended to reduce the occurrence of pest emergencies.

6.2 Exemption for Academic Programs

Adoption of an IPM Plan presents unique challenges to an education institution which includes pest management related activities within its academic and instructional training programs. By design, these programs serve the community and industry by producing students and graduates capable in the best practices of the industry they will serve – which may include procedures and methods that do not comply with the IPM Plan.

As a result of conversations between sister community college’s such as Chemeketa Community College and the *Department of Agriculture, The Oregon State University Extension Service IPM Department, and the Oregon Community Colleges Association*, it is the college’s understanding that ORS634.700 to 634.750 is not intended to effect academic or instructional programs.

As an organic learning garden, herbicides and pesticides shall not be used in the learning garden or greenhouse under any circumstances.

Note: There are no “areas of exclusion” inside or outside buildings on college property at any of the college locations associated with the application of this IPM plan.

The College Board of Education has provided authority to the College President to designate the IPM Coordinator for implementation of the IPM plan and assigns responsibilities to the IPM Coordinator and other parties as described herein:

7. IPM Coordinator

The responsibilities of the IPM Coordinator shall include the following:

- a) Designating IPM designees(s) and assigning duties as deemed appropriate;
- b) Giving notices and posting warning under ORS634.740;
- c) Overseeing pest prevention efforts;
- d) Retaining pesticide application records under ORS634.750;
- e) Providing a process for responding to inquiries and complaints about non-compliance with IPM Plan;
- f) Conducting outreach to the college community about the college's IPM Plan;
- g) Providing for the identification and evaluation of pest situations;
- h) Determining the means of appropriately managing pest damage that will cause the least possible hazard to people, property, and the environment;
- i) Ensuring the proper and lawful performance of pesticide applications;
- j) Evaluating pest management results;
- k) Keeping records as required by ORS634.750;
- l) Maintain the list of approved low-impact pesticides;
- m) Attend not less than six hours of IPM training each year as required by ORS634.700 et al;
- n) Review the IPM Operations Manual periodically and update when applicable;
- o) Option to contract with a certified pest management professional (PMP).
- p) Prepare and submit an annual report of the IPM plan to the College Leadership Team and posting these reports on the Facilities Management and Planning web page.
- q) All IPM Plan records are up to date and stored in the Facilities Management and Planning department office files, scanned and stored electronically in a shared and backed up drive.

7.1 Deans/Director/Managers/Supervisors

The responsibilities for deans, directors, managers and supervisors shall include the following:

- a) Assuring that employees within their respective departments receive annual IPM training.
 - a. Prepare for and schedule annual training with staff.
- b) Submit an annual training verification form to the IPM Coordinator (or designee).
- c) Attend an annual IPM training provided by IPM Plan Coordinator or designee;
- d) Assuring that employees within their respective departments perform their duties in accordance with IPM trainings;
- e) Reporting pests and pest-conducive conditions to the college's work order system.

7.2 Employees (Staff, Faculty, Adjunct Faculty)

The responsibilities for employees in each department shall include the following:

- a) Attending annual standardized IPM training and provide training verification as requested;

- b) Perform their duties in accordance with IPM trainings;
- c) Reporting pests and pest-conducive conditions to the college's work order system.

7.3 Contractors and Service Providers

All contractors and service providers shall adhere to the college's IPM policy and IPM Plan as described herein.

7.4 Custodial Employees

The responsibilities for custodial employees shall include the following:

- a) Attending annual IPM training provided by the IPM Coordinator (or designee);
- b) Continually monitoring for pest-conducive conditions during daily work;
- c) Reporting pest problems and pest-conducive conditions that cannot be resolved in a short time to the IPM Coordinator (or designee); **and** writing a work order within 24 hours of the observation, documenting the exact location and specifics regarding the observation.
- d) Reporting employees to the IPM Coordinator who refuse to reduce clutter and other pest-conducive conditions in classrooms, offices and work areas;
- e) Confiscate any unapproved pesticides (i.e. aerosol spray cans such as Raid) discovered during normal work activities and delivering them to the Custodial Services Coordinator or Manager.

7.5 Maintenance/HVAC Employees

The responsibilities for maintenance and HVAC employees shall include the following:

- a) Attending annual IPM training provided by the IPM Coordinator (or designee);
- b) Sealing small cracks or holes when reported as pest-conducive condition;
- c) Placing and checking sticky insect monitoring traps if requested by IPM Coordinator;
- f) Monitoring for pest-conducive conditions during daily work;
- d) Reporting pest problems and pest-conducive conditions that cannot be resolved in a short amount of time to the IPM Coordinator (or designee); **and** writing a work order within 24 hours of the observation, documenting the exact location and specifics regarding the observation.
- e) Confiscate any unapproved pesticides (i.e. aerosol spray cans such as Raid) discovered during normal work activities and delivering them to the Trades Coordinator.

7.6 Grounds Employees

The responsibilities for grounds crew employees shall include the following:

- a) Attending annual IPM training provided by the IPM Coordinator (or designee);
- b) Working with the IPM Coordinator (or designee) to reduce conditions conducive to weeds, gophers, moles, yellow jackets, hornets, carpenter ants, termites, and other outdoor pests;
- c) Keeping vegetation (including tree branches, bushes, and ground vegetation) at least 24 inches from building surfaces;
- d) Proper mulching in landscaped areas to reduce weeds;
- e) Proper fertilization, over-seeding, mowing height, edging, drainage, aeration, and irrigation scheduling in turf areas to reduce weeds;
- f) When the decision is made to apply a pesticide, following notification, posting, record-keeping and reporting protocols.

7.7 Food Service Managers, Supervisors and Contracted Employees

The responsibilities for food service employees located on property controlled and/or owned by the college shall include the following:

- a) Attend an annual IPM training provided by IPM Plan Coordinator (or designee);
- b) Submit an annual training verification form to the IPM Coordinator (or designee);
- c) Food Service managers and supervisors assure that their employees perform their duties in accordance with IPM trainings;
- d) Assuring floor under serving counters and movable equipment is kept free of food and drink debris;
- e) Avoiding long-term storage or use of cardboard boxes;
- f) Keeping exterior kitchen doors closed;
- g) Reporting pest-conducive conditions that require maintenance (e.g. leaky faucets, cracks or holes etc.) to the college's work order system;
- h) Placing, checking, and monitoring sticky insect traps as instructed by IPM Coordinator (or designee);
- i) Report sightings of rodents or rodent droppings immediately by writing and submitting a facilities work order with location, description of observation, and magnitude of issues noted.
- j) Maintaining a "Pest Log" in each kitchen location.

8. Application of Low-Impact Pesticides

The IPM Coordinator (or designee) may authorize the application of a low-impact pesticide when non-chemical pest control measures have been ineffective; subject to ORS634.730. All pesticide applications must be made by a licensed commercial or public pesticide applicator licensed through the Oregon Department of Agriculture with a public applicators license.

9. Notification and Posting for Non-Emergencies

When prevention or management of pests through other measures proves to be ineffective, the use of a low-risk pesticide is permissible. Documentation of these measures is a prerequisite to the approval of any application of a low-risk pesticide. This documentation will remain on file with the IPM Coordinator.

9.1 Non-Emergency Pesticide Application

All non-emergency pesticide applications that occur in or around a building must adhere to proper notification procedures unless the IPM Coordinator authorizes an exception.

- a) If the labeling of a pesticide product specifies a re-entry time, the pesticide may not be applied to an area of the college where people are expected to be present before expiration of that re-entry time;
- b) If the labeling does not specify a re-entry time, a pesticide may not be applied to an area of the college where people are expected to be present before expiration of a re-entry time that the IPM Coordinator (or designee) determines to be appropriate, based on the times at which people would normally be expected to be in the affected area, area ventilation *and whether the area will be cleaned before people are present.*
- c) The IPM Coordinator (or designee) **or authorized service contractor** will give written notice of a proposed pesticide application at least 24 hours before the application occurs.
- d) The notice must identify the name, trademark or type of pesticide product, the EPA

- registration number of the product, the expected area of the application, the expected date of application and the reason for the application.
- e) The IPM Coordinator (or designee) **or authorized service contractor** shall place warning signs around pesticide application areas 24 hours before the application occurs and shall be maintained for 72 hours after the application occurs.
 - f) A warning sign must bear the words “Warning: pesticide treated area”, and give the expected or actual date and time for the application, the expected or actual re-entry time, and provide the telephone number of a contact person (the person who is making the application and/or the IPM Coordinator or designee).

10. Notification and Posting for Emergencies

The IPM Coordinator, after consultation with administration and faculty may declare the existence of a “pest emergency”.

- a) If a pesticide is applied at a campus due to a pest emergency, the IPM Coordinator shall review the IPM Plan to determine whether modification of the plan might prevent future pest emergencies;
- b) The governing body shall review and take formal action on any recommendations in the annual report;
- c) The declaration of the existence of a pest emergency *is the only time a non-low-impact pesticide may be applied;*
- d) If a pest emergency makes it impracticable to give a pesticide application notice no later than 24 hours before the pesticide application occurs, the IPM Coordinator shall send the notice not later than 24 hours after the application occurs;
- e) The IPM Coordinator (or designee) shall place notification signs around the area as soon as practicable, but no later than at the time the application occurs.

Note: ORS634.700 also allows the application of a no-low-impact pesticide “by, or at the direction or order of, a public health official”. If this occurs, every effort must be made to comply with notification and posting requirements above.

11. Inquiries and Complaints

Any member of the college community may submit an inquiry or complaint as follows:

- a) Writing a work order directly by clicking on the “Megamation” work order system hot link noted on this web page and filling in the fields:
<http://www.lanecc.edu/facilities/workrequests.html>
- b) Accessing the college’s work order system by submitting an email to FacilitiesOffice@Lanecc.edu, or
- c) The IPM Coordinator (or designee) will respond to all inquiries and complaints in a timely fashion.

12. Record Keeping of Pesticide Applications

The IPM Plan Coordinator (or designee) shall keep a copy of the following pesticide product information on file in the Facilities Management and Planning department with:

- a) A copy of the label;
- b) A copy of the MSDS;

- c) The brand name and USEPA registration number of the product;
- d) The approximate amount and concentration of product applied;
- e) The location of the application;
- f) The pest condition that prompted the application;
- g) The type of application and whether the application proved effective;
- h) The pesticide applicator's license numbers and pesticide trainee or certificate numbers of the person applying the pesticide;
- i) The name(s) of the person(s) applying the pesticide;
- j) The dates on which notices of the application were given;
- k) The dates and times for the placement and removal of warning signs; and
- l) Copies of all required notices given; including the dates the IPM Coordinator gave the notices.

The above records must be kept on file for at least **four** (4) years following the application date.

13. Approved List of Low-Impact Pesticides

Note: All pesticides used must be used in strict accordance with label instructions.

According to ORS634.705 (5), the College Board of Education (governing body) of Lane Community College shall adopt a list of low-impact pesticides for use with their IPM Plan. The College Board of Education or the IPM Coordinator may include any product on the list except products that:

- a) Contain a pesticide product or active ingredient that has the signal words "warning" or "danger" on the label;
- b) Contain a pesticide product classified as a human carcinogen or probable human carcinogen under the United States Environmental Protection Agency 1986 Guidelines for Carcinogen Risk Assessment, or
- c) Contain a pesticide product classified as carcinogenic to humans or likely to be carcinogenic to humans under the United State Environmental Protection Agency 2003 Draft Final Guidelines for Carcinogen Risk Assessment.

As a part of pesticide registration under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) and re-registration required by the Food Quality Protection Act (FQPA), EPA office of Pesticide Programs (OPP) classifies pesticide active ingredients with regards to their potential to cause cancer in humans. Depending on when a pesticide active ingredient was last evaluated the classification system used may differ as described above.

The end (reference appendix's to follow)

Appendix 1 (Reference Document)

Small Ants

Most small ants in Oregon are harmless. They do not transmit human disease and are thus called nuisance ants. Pavement Ants and Odorous House Ants are the two most common types of ants found in Oregon schools.

Nuisance ants may nest outdoors under objects, in soil, or within wall voids of structures. Pavement ants nest in soil under concrete walkways or foundations. Ants sometimes enter buildings in search of food or water, or during periods of heavy rain. Some sugar-feeding ants may move indoors in winter when their preferred food source (honeydew from aphids) is gone. Ants may also be more noticeable in spring or summer as colonies are dividing and establishing new nests.

Pavement Ant

The pavement ant gets its name from commonly locating its nest in or under cracks in pavement. It also nests under stones and at the edges of pavement. In winter it will nest in buildings in crevices adjacent to a heat source. Pavement ants tend aphids for their honeydew, and feed on seeds and insect remains. Indoors they may feed on sweets and greasy food.

Odorous House Ant

The odorous house ant gets its name from the pungent, rotten-coconut-like odor given off when it is crushed. It nests in a wide variety of places both outdoors and indoors. Odorous house ants tend aphids (as well as scale insects and mealy bugs) for their honeydew, which they prefer, but they also feed on other insects. Indoors they may feed on sweets, protein foods, and greasy food. When odorous house ants are disturbed or threatened, they can break off from the main colony and form satellite colonies. This is called “budding”. When odorous house ants disperse and form new colonies and nests in this way, one colony of ants can actually have multiple satellite colonies and multiple queens. Disturbances, such as spraying a pesticide on a group of odorous house ants, actually increase the number of ants because of budding.

When Nuisance Ants Come Inside

Total eradication of nuisance ants indoors is extremely difficult. The district’s first response to any trail of ants is to clean surfaces with soapy water or a disinfectant. Fortunately, most ants will leave on their own if denied access to food and water. Additional control measures are warranted if ants are entering a school in large enough numbers to cause a disruption in the learning environment. The district will use mechanical methods (such as crack sealing) first, and may use low-impact pesticide baits only as a last resort.

If nuisance ants become a disruption at a school, staff should take the following steps:

- Ask the area office staff or custodian to vacuum any food crumbs, clean up any garbage or spills, and to use soap and water to clean areas where ant trails are seen (unless the areas are small and staff can clean them quickly). This can prevent other ants from following the pheromone trails that ants leave to mark the way to food.
- Make sure that any other food or water sources are removed, placed in tightly sealed containers, cleaned, or repaired. Food and water sources can include human or pet food, recycling bins, leaking faucets, clogged drains, damp wood, etc. For repairs, ask your administrative staff or call the facilities office at extension 5216 or contact your area custodian to fill out a work request at: <http://lanecc.edu/facilities/workrequests.html>
- If staff finds a place where an ant trail enters the room or building, they should mark it for later sealing by the custodian or the maintenance trades staff. A temporary “seal” can be made with duct tape, if desired. The person that identifies the location shall write a maintenance work order or notify the facilities maintenance trades staff at: facilitiesoffice@lanecc.edu.

PROTOCOL FOR TREATING NUISANCE ANTS

A. When staff observes a small number of ants (e.g. under 10 ants) they must:

- 1st) Spend two minutes trying to find out where the ants are coming from
- 2nd) Kill the ants with a paper towel or similar
- 3rd) Remove any food or liquid the ants were eating
- 4th) Wipe down the area with soapy water to remove pheromone trails
- 5th) Jot down any action(s) they take in the Pest Log

B. If the ants come back or there are more than a small number (e.g. over 10 ants):

- 1st) Spend two minutes trying to find out where the ants are coming from
- 2nd) Jot down any action(s) they take in the Pest Log
- 3rd) Ask the custodian to come with vacuum and sealant as soon as he/she is able

C. The custodian will:

- 1st) Spend two minutes trying to find out where the ants are coming from
- 2nd) Vacuum up the ants and any food debris nearby (vacuum up a tablespoon of corn starch to kill most of the ants in the vacuum bag, then put the vacuum bag inside plastic garbage bag, seal it, and dispose of it properly)
- 3rd) Seal up the crack or hole where the ants were coming from (do what can be done in less than 15 minutes)
- 4th) Wipe down the area with soapy water to remove pheromone trails
- 5th) Jot down the above in the Pest Log

When to use baits:

To avoid a proliferation of small ants and/or unnecessary applications of pesticides, the routine use of ant baits is not permitted without first:

- 1) Educating staff on sanitation, monitoring, and exclusion as the primary means to control the ants.
- 2) Establishing an acceptable pest population density (e.g., approximately 10 ants).
- 3) Improving sanitation (e.g. cleaning up crumbs and other food sources) and structural remediation (sealing up cracks or holes where the ants are coming from).
- 4) College employees are required to apply the above guidance in sections A, B, and C.

If the uses of low-impact pesticide baits are deemed necessary, they will be placed in childproof containers, and used only in areas that are out of sight and reach of children/students. Small amounts of low-impact pesticide gels or pastes may also be placed in cracks and crevices or low-impact pesticide dusts may be sprayed into wall voids.

Staff must be informed that sanitation is important to ensure the effectiveness of any bait that is used. Ants are less likely to take bait if there are more attractive food and water sources nearby.

ADDITIONAL EXCLUSION MEASURES

In addition to sealing up cracks and holes where the ants are coming from, custodial and/or maintenance trades staff should routinely seal up as many cracks and holes as time allows, especially those around:

- Baseboards
- Cupboards
- Electrical outlets
- Pipes
- Sinks
- Toilets
- Windows
- Doors

Outdoors, pipe and electrical chases should be sealed off.

Grounds staff should prune away any tree limbs or bushes (leaving about 24” of space) that are touching the building.

Appendix 2

Annual IPM Inspection Form

(Pests and Pest Conducive Conditions Checklist)

Campus Location: _____ Building: _____ Inspected By: _____

Date and/or Quarter: _____ Work Order Number: _____

Entryways	Yes	No	Not Sure	N/A
Doors closed when not in use				
Doors shut tight and close on their own				
Door sweeps installed so no ¼" gaps				
Cracks & crevices around door are sealed				

If pests are present in the area, write what kind here _____

Notes:

Outside Areas	Yes	No	Not Sure	N/A
Area free from trash, old vehicles, other pest attractants				
All trash cans have secure lids				
Trash cans cleaned regularly				
Site has good drainage and is free from standing water				
Bushes, shrubs, trees at least 18" from building				
Tree branches not overhanging roof				
All dumpsters located away from building				
All dumpsters clean				
No gaps between windows or screens and frame or other areas in building construction				
Eaves and roofs free from birds, wasps, etc.				
Play structures free from wasp harborage areas				
Exterior of structure is intact – i.e. not rotting wood, etc.				

If pests are present in the area, write what kind here _____

Notes:

Kitchen and Food Preparation Area	Yes	No	Not Sure	N/A
Free of unauthorized pesticides				
Trash emptied daily				
Door sweeps installed so no ¼" gaps				
Floor at every corner is clean and without signs of pests				
Area is free of standing water				
Floor drains and floor sinks are clean				
All faucets close properly and have no leaks or drips				
Under stoves, sinks, and dishwasher kept clean				
No open holes or other access to outside				
Any cracks in walls or floors are sealed properly				
Windows have screens on them				
Air system vents are free of grease and dirt				
Storage is kept off the floor on wire rack shelving				
Food is put away and stored properly in sealed containers				
Cardboard boxes present				
No long term storage of anything in cardboard boxes				
Pest monitors (sticky traps) are present and dated				
Pest log is posted				
Breaker boxes free of evidence of pests				

If pests are present in the area, write what kind here _____

Notes:

Custodial and Custodial Closets	Yes	No	Not Sure	N/A
Area is free of unauthorized pesticides				
Mops are clean and hanging up when not in use				
Closets are free of trash and food				
Custodial closets are in good order and organized				
Trash cans and maid carts are emptied daily and clean				
Break area is clean and free of food, crumbs and trash				
Storage areas free of items stored in cardboard boxes				
Break area free of cloth covered couches and chairs				
Custodians are trained in the IPM process				
IPM records (including pest logs, monitoring trap data, pest management actions, etc.) are on file				

If pests are present in the area, write what kind here _____

Notes:

Boiler Rooms and Fan Rooms	Yes	No	Not Sure	N/A
Free of unauthorized pesticides				
Room is free of standing water				
Room is cleaned regularly				
Room is free of trash and food				
Room is free of storage, especially in cardboard boxes				
Floor drains are clean				
Plumbing is free of leaks and condensation				
Cracks or holes in floors and walls are sealed properly				
Outside air intakes are properly screened & free of trash				

If pests are present in the area, write what kind here _____

Notes:

Teachers Lounge	Yes	No	Not Sure	N/A
Room is free of cloth couches and chairs				
It's clean behind and under microwave				
It's clean under and behind vending machines				
It's clean inside, under, and behind the refrigerator				
All counters clean and free of food bits and such				
Floor at every corner is clean and without signs of pests				
Under sink is kept clean				
Cupboards clean and any food is in sealed containers				
Free of unauthorized pesticides				
Pest monitors (sticky traps) are present and dated				
Pest log is posted				

If pests are present in the area, write what kind here _____

Notes:

Classrooms or Offices	Room #	Yes	No	Not Sure	N/A
Free of unauthorized pesticides					
Free of clutter					
Indoor plants healthy and free of pests					
Desks, closets, and cubbies clean and free of food, clutter					
All food items are stored in sealed plastic containers					
Animal or bird cages are clean in and around the area					
Any pet food is stored in sealed plastic containers					
Sinks are free of dripping or standing water					
Gaps or holes under sinks or counters have been sealed					
Holes or gaps to the outside are sealed					
Outside windows and doors close tight and have no gaps					
Window screens (if any) are in good repair					
Nothing (except short-term) is stored in cardboard boxes					

If pests are present in the area, write what kind here _____

Notes:

Classrooms or Offices	Room #	Yes	No	Not Sure	N/A
Free of unauthorized pesticides					
Free of clutter					
Indoor plants healthy and free of pests					
Desks, closets, and cubbies clean and free of food, clutter					
All food items are stored in sealed plastic containers					
Animal or bird cages are clean in and around the area					
Any pet food is stored in sealed plastic containers					
Sinks are free of dripping or standing water					
Gaps or holes under sinks or counters have been sealed					
Holes or gaps to the outside are sealed					
Outside windows and doors close tight and have no gaps					
Window screens (if any) are in good repair					
Nothing (except short-term) is stored in cardboard boxes					

If pests are present in the area, write what kind here _____

Notes:

Classrooms or Offices	Room #	Yes	No	Not Sure	N/A
Free of unauthorized pesticides					
Free of clutter					
Indoor plants healthy and free of pests					
Desks, closets, and cubbies clean and free of food, clutter					
All food items are stored in sealed plastic containers					
Animal or bird cages are clean in and around the area					
Any pet food is stored in sealed plastic containers					
Sinks are free of dripping or standing water					
Gaps or holes under sinks or counters have been sealed					
Holes or gaps to the outside are sealed					
Outside windows and doors close tight and have no gaps					
Window screens (if any) are in good repair					
Nothing (except short-term) is stored in cardboard boxes					

If pests are present in the area, write what kind here _____

Notes:

Other Room:	Yes	No	Not Sure	N/A
Free of unauthorized pesticides				
Room is free of standing water				
Room is free of trash and food				
Room is free of storage, especially in cardboard boxes				
Any food items are stored in sealed plastic containers				
Free of clutter				
Cracks or holes in floors and walls are sealed properly				
Outside windows and doors close tight and have no gaps				
Window screens (if any) are in good repair				

If pests are present in the area, write what kind here _____

Notes:



Integrated Pest Management

Pest Log: STAFF LOUNGE AND BREAK/LUNCH ROOMS

Report of Pest Sighting				Respondent	
Date	Name	Room# and location	Pest/Problem Description	Action Taken and Cost (if any)	Initials & Date



Training Outlines

CUSTODIAL STAFF TRAINING

1. Concerns about Pests and Pesticides
 - a. Pests which are Public Health Risks
 - b. Pesticide Risks
2. Introduction to Integrated Pest Management (IPM)
 - a. IPM is...
 - b. IPM involves...
3. Benefits of IPM to custodial staff
 - a. Recognition of your important role within the school district
 - b. More effective, efficient, and long-lasting solution to specific pest issues
 - c. Reduced pesticide use
 - d. Improved children's health
 - e. Long-term cost savings for school and school district
 - f. Better organized working environment
4. Pest basics
 - a. Food
 - b. Water
 - c. Shelter
5. Role of custodial staff in a school IPM program
 - a. Custodial staff are critical to the success of a district's IPM program
 - b. Awareness of pest conducive conditions
 - c. Reduction of pest conducive conditions
 - d. Use of insect monitoring traps
 - e. Communication
 - i. Report pests in pest log
 - ii. Report maintenance needs
 - iii. Regular communication and follow up with facilities staff/IPM Coordinator
 - f. Sanitation
 - g. Cultural changes
 - h. Attend annual IPM training provided by the IPM Plan Coordinator
 - i. When to take action against a pest: appropriate pest-response action for custodial staff
6. Requirements of ORS 634.700 – 634.750 (IPM plan, Coordinator, no pesticides applied without license, etc.)

MAINTENANCE/CONSTRUCTION STAFF TRAINING

1. Concerns about Pests and Pesticides
 - a. Pests which are Public Health Risks
 - b. Pesticide Risks
2. Introduction to Integrated Pest Management (IPM)
 - a. IPM is...
 - b. IPM involves...
3. Benefits of IPM to schools
 - a. More effective, efficient, and long-lasting solution to specific pest issues
 - b. Reduced pesticide use
 - c. Improved children's health
 - d. Long-term cost savings for school and school district
 - e. Better organized working environment
4. Pest basics
 - a. Food
 - b. Water
 - c. Shelter
5. Role of maintenance/construction staff
 - a. Monitoring for pest conducive conditions
 - b. Working with Coordinator to develop priority list, deadlines for pest exclusion needs
 - c. Working with Coordinator to develop protocols and provisions for pest avoidance and prevention during construction and renovation projects
 - d. Attend annual IPM training provided by the IPM Plan Coordinator
6. Requirements of ORS 634.700 – 634.750 (IPM plan, Coordinator, no pesticides applied without license, etc.)

GROUNDS STAFF TRAINING

1. Concerns about Pests and Pesticides
 - a. Pests which are Public Health Risks
 - b. Pesticide Risks
2. Introduction to Integrated Pest Management (IPM)
 - a. IPM is...
 - b. IPM involves...
3. Benefits of IPM to schools
 - a. More effective, efficient, and long-lasting solution to specific pest issues
 - b. Reduced pesticide use
 - c. Improved children's health
 - d. Long-term cost savings for school and school district
4. Grounds Pest Basics
 - a. Food
 - b. Water
 - c. Shelter
5. Grounds Pest Specifics
 - a. Review of OSU turf management publications
 - b. Review of model plan appendix 1-g
 - c. Mulching landscaped areas
 - d. Aeration of turf
 - e. Irrigation scheduling
 - f. Gophers, Moles, Voles
 - g. Other pests
6. Role of Grounds Staff
 - a. Keeping all vegetation at least three feet from buildings
 - b. Proper aeration, mulching, irrigation scheduling, etc.
 - c. Attend annual IPM training provided by the IPM Plan Coordinator
 - d. Pesticide application notification, posting, record keeping, and reporting
7. Requirements of ORS 634.700 – 634.750 (IPM plan, Coordinator, no pesticides applied without license, etc.)

KITCHEN STAFF TRAINING

1. Concerns about Pests and Pesticides
 - a. Pests which are Public Health Risks
 - b. Pesticide Risks
2. Introduction to Integrated Pest Management (IPM)
 - a. IPM is...
 - b. IPM involves...
3. Benefits of IPM to Kitchen Staff
 - a. Reduced potential for pest-vectored diseases
 - b. More effective, efficient, and long-lasting solution to specific pest issues
 - c. Reduced pesticide use
 - d. Improved children's health
 - e. Long-term cost savings for school and school district
4. Pest Basics
 - a. Food
 - b. Water
 - c. Shelter
 - d. Kitchen and pantry are often the most pest-prone area of a school
5. Role of Kitchen Staff in a School IPM Program
 - a. Awareness of pest conducive conditions in kitchen, pantry, dumpster area
 - b. Reduction of pest conducive conditions in kitchen, pantry, and dumpster area
 - c. Communication
 - i. Report pests in pest log
 - ii. Report maintenance needs
 - d. Sanitation
 - e. Cultural Changes
 - f. Education
 - i. Maintain IPM awareness among all kitchen staff
 - ii. Participation in IPM inspections of kitchen
 - iii. Attend annual IPM training provided by IPM Plan Coordinator
 - g. When to take action against a pest: appropriate pest-response action for kitchen staff
6. Requirements of ORS 634.700 – 634.750 (IPM plan, Coordinator, staff cannot use pesticides)

FACULTY TRAINING

1. Concerns about Pests and Pesticides
 - a. Pests which are Public Health Risks
 - b. Pesticide Risks
 2. Introduction to Integrated Pest Management (IPM)
 - a. IPM is...
 - b. IPM involves...
 3. Benefits of IPM to Faculty
 - a. More effective, efficient, and long-lasting solution to specific pest issues
 - b. Reduced pesticide use
 - c. Improved children's health
 - d. Long-term cost savings for school and school district
 - e. Better organized working environment
 4. Pest Basics
 - a. Food
 - b. Water
 - c. Shelter
 5. Role of Faculty in a School IPM Program
 - a. Awareness of pest conducive conditions in your classroom and teacher's lounge
 - b. Reduction of pest conducive conditions in your classroom and teacher's lounge
 - c. Monitoring & communication
 - i. Report pests in pest log
 - ii. Report maintenance needs
 - d. Sanitation
 - e. Cultural changes
 - f. Education
 - i. Involve students in classroom pest management (monitoring, sanitation, cultural changes)
 - ii. Attend annual IPM training provided by IPM Plan Coordinator
 - g. When to take action against a pest: appropriate pest-response action for faculty
- Requirements of ORS 634.700 – 634.750 (IPM plan, Coordinator, teachers cannot use pesticides)

Appendix 5 (Reference Document)

Appendix 1h, Model School IPM Plan, Version 2.0 Last edited 1/30/12

Tim Stock stockt@science.oregonstate.edu Periodic updates will be posted at www.ipmnet.org

House Mouse in Schools

After humans, the House Mouse (*Mus musculus*) is the second most successful mammal in the world. They breed rapidly, can consume a broad variety of food, require little or no water, and are able to adapt to a wide range of habitats. Unfortunately, they are disease vectors and the proteins found in their urine circulate in the air and can be asthma triggers for sensitized individuals. They are considered one of the most troublesome pests in the United States. The acceptable indoor threshold for the House Mouse is zero.

Poorly sealed school buildings are highly vulnerable to mouse invasion. Most rooms are maintained at favorable temperatures and often contain edible items. A mouse running along the outside edge of a building is drawn into the building by warm air and food odors coming from under doors and through holes in the wall.

Mice have good hearing, sense of smell, taste, and touch. They are excellent climbers and can run up vertical walls to get to food. They can move along wires, utility cables, or ropes, can jump vertically 12 inches, and survive an 8' fall. Adult mice can squeeze through openings slightly larger than 1/4 inch in diameter.

Once inside, mice often establish themselves inside food storage and prep areas, closets, cabinet bases, rooms with lots of clutter, or similar locations. They will also climb wall utility lines for electrical or plumbing, and nest within suspended ceiling spaces.

Portable-style classroom buildings are extremely vulnerable to a mouse invasion as portables provide attractive crawl spaces providing access to dark, dirt floors, cool in summer; warm in winter, and protection from predators. Once the mice have gained entry to the crawl space, they find their way up through the floor along crevices or gaps created by plumbing or other utility lines following their nose towards food odors or warm/cool air currents. Portables also contain gaps and openings directly into the portables through any broken vent louvers, screens etc.

Excluding mice from buildings

In order to reduce the threat of rodent borne diseases, mouse allergens, and other possible health threats from mice, it is important to make every reasonable effort to prevent mice from becoming established inside buildings. Inspect for access points and seal them up using the following criteria as guidance:

1. Any gaps of 1/4 inch or more should be properly sealed using the appropriate sealant (steel wool, foam and other temporary materials are not recommended). Seal off using good materials (i.e., not steel wool nor expandable foam). We recommend silicone and acrylic urethane products because they stretch as gaps and cracks in buildings expand and contract due temperature changes and other factors. Larger holes and cracks can be stuffed with XCLUDER cloth or STUFFIT copper mesh, and then sealed up with a silicone or acrylic urethane product.
2. Seal around water, gas, electric and other pipes and conduits going through walls.
3. All external doors should be mouse proofed using the high quality brush-type door sweeps that seal the gap between the threshold and the door base.

4. All ventilation screens, louvers used in attic spaces, furnace closets, and so forth, should be kept in good repair. All gaps around the frames of screens and louvers should also be kept tightly sealed.
5. It is not realistic to attempt to mouse proof the crawl space skirt around portable classrooms. However, it makes sense to keep the skirting as tight as possible and in good contact with the ground to deny entry to other mammal pests such as raccoons, feral cats, skunks, rats, and other mammal pests.

Don't Attract the Mice

No trash should be allowed to accumulate along the exterior walls. If food trash is allowed to remain, this condition will attract mice to the building perimeter. Do not place trash receptacles close to exterior doorways. Keep dumpsters clean, with lids closed. Drainage holes can be screened or plugged.

Don't Harbor Mice

De-clutter storage areas and classrooms! It is best to use plastic (transparent) totes for storage. If cardboard boxes have not been opened in 2 years, the box and contents may be contaminated with urine and feces. Recycle or Chuck-it-Out. Consider a mandatory 15 minute clear-out session a few times each year. Consider Clutter Bug Awards for the worst offenders or Clutter Free Awards for the best examples.

Mouse Vulnerable Areas (MVAs)

Once inside, mice most commonly nest and/or forage about in mouse vulnerable areas:

- 1) Kitchen, pantry, food preparation areas, and food consumption areas (including classrooms and teachers lounge).
- 2) The crawl space beneath portable classrooms. Invading mice will often construct platform nests up on the various structural ledges made up of grasses, leaves, feathers, or the building's batting insulation. The mice will also carry in and store relatively large amounts of seeds, nuts, and insect carcasses in any available floor and wall nooks.
- 3) Furnace closets (especially if the closet's ventilation louver is not in good repair).
- 4) Beneath kitchenette and bath cabinets where utility lines come up through the floor.
- 5) Within the suspended ceilings during the cold weather months.
- 6) Stuffed chairs and couches in staff lounges.

These MVAs are the target zones for setting out mousetraps.

Eliminating Established Mice with Snap Traps

Snap trapping results in the fastest elimination of mice, however trapping is useless in a cluttered environment. **You have to de-clutter if you want to de-mouse.** Mice typically do not venture more than 30 feet from their nest (unless food is sparse).

Traps are very effective for mice. They take advantage of their curiosity. Mice will be trapped easily the first night, but then they will be trap shy. Set many traps the first night (six per mouse, at least three feet apart); clear them in the morning, and remove. Set them again a week later, in slightly different locations. This technique will overcome trap-shyness. Dead mice and their fecal pellets should be handled as described in the "Safety Precautions" section at the end of this document. Plastic style snap traps (e.g., the Kness Snap-E, J.T. Eaton JAWZ, Bell Trapper Mini Rex, Woodstream Quick Kill, etc.) are more durable, and can be cleaned with disinfectants more easily. The disposable wooden-based traps are an option when a disposable trap is required.

Traps can be baited with small smudges of peanut butter or a few drops of vanilla, orange, or any other extract oils. Despite common myths, there is no one “favorite” bait for mice. They are opportunists, and will sample most food odors they bump into. Mice also forage for nesting materials as well as food, so cotton balls may be used with traps. Mice mainly travel along walls. Place traps up against walls with the snap end facing the wall.

Inspecting and Monitoring for Mice

When carrying out inspections, look for fecal pellets in mouse vulnerable areas. Also look at cardboard boxes, stuffed furniture, and similar items for signs of gnawing. In areas with past mice problems or potential mice problems, bait stations with nontoxic detection blocks (e.g. DETEX BLOX) may be used to monitor activity. Block baits should be replenished on an 8-12 week basis, or as necessary due to consumption, or spoilage of the blocks.

It must be stressed that even when using non-toxic detection blocks, they should be put inside tamper-resistant bait stations that are designed so the blocks will not fall out should the stations be picked up and shaken.

Possible locations for the stations include:

- 1) Within the furnace closet, in the back area of the closet, preferably behind the furnace;
- 2) beneath any kitchenette sink;
- 3) beneath any bath cabinet;
- 4) in the suspended ceiling, positioned directly above the kitchenette, bath, and nearby the furnace closet.

To monitor for mice under portables, put one or two tamper-resistant bait stations along the middle of the side of the skirts underneath the portable. To accomplish this, each portable must have an access door that is easily opened, and closes tightly. Exterior storage sheds (bike sheds, dumpster sheds, equipment sheds, etc.) should also be monitored for mice. This can be accomplished by installing two bait stations; one on each side of the shed. The baits should be replenished on an 8-12 week basis, or as necessary as mentioned above.

Safety Precautions for Handling and Removing Rodent Carcasses and Feces from Schools and Other Public Buildings*

Despite good efforts, some mice inevitably gain entrance to schools and other public buildings. Most mice and the accompanying excrement are not considered to be highly hazardous to our health. Still, it makes sense to err on the side of caution, and practice good safety measures when handling dead rodents in traps, and/or cleaning up rodent excreta.

Precautions When Handling Dead Rodents

- 1) Wear rubber or plastic gloves (disposable gloves are usually purchased in boxes of 100 by pest management professionals, and building custodians).
- 2) Spray the dead mouse and any trap with disinfectant until wet.
- 3) Any inexpensive household disinfectant will suffice as will a weak solution consisting Of 10% bleach and 90% water.
- 4) Turn a “zip-lock” type bag inside out.
- 5) With a hand inside the bag, pick up the rodent and the trap.
- 6) Invert the bag over your hand and seal the bag.

- 7) Wrap the bag in a newspaper and dispose in a dumpster or garbage can.
- 8) Spray the area where the trap or the dead mouse was lying with a light spray of disinfectant and let dry.
- 9) Dispose of the gloves in the trash, or for re-useable gloves, spray the outside of the gloves with disinfectant, then remove the gloves and wash hands with soap and water.

Precautions When Cleaning up Small Amounts of Rodent Droppings

- 1) Feces should not be swept up, or vacuumed because this can cause the excrement residues to become airborne and be inhaled.
- 2) Wear rubber or plastic gloves (disposable gloves are usually purchased in boxes of 100 by pest professionals, and building custodians).
- 3) Spray the droppings and affected area with disinfectant until wet.
- 4) Use a wet paper towel to pick up the disinfected droppings.
- 5) Place the droppings and paper towel into a "zip-lock" type bag and seal the bag.
- 6) Dispose the bag in a dumpster or garbage can.
- 7) Dispose of the gloves in the trash, or for re-useable gloves, spray the outside of the gloves with disinfectant, then remove the gloves and wash hands with soap and water.

Note:

1. Employees wishing to maximize personal protection shall use coveralls, and a respirator with a HEPA (NP 100 to NP 400) filter and/or when removing rodent feces in enclosed spaces, especially where a large amount of rodent feces are present.

* Adapted from:

- 1) CDC Hantavirus preventative Recommendations (www.CDC.gov.)
- 2) Army Pest Management Bulletin, 2001. Vol. 22 (4)
- 3) Communications from Bobby Corrigan, Ph.D. RMC Pest Management Consulting.



Pesticide Application Notification Form

All pesticide applications require at least a 24 hour advance notification.

A pesticide application is scheduled for:

DATE _____ TIME _____ FMP CONTACT: _____

LCC Staff Person Representing Area _____ Notified: Y/N

Pesticide Common Name	Pesticide Trade Name / Type of Pesticide Product	EPA Registration Number

Reason for the application:

Indoor Environmental Quality Measures:

Time and Dates to stay Out of Affected Areas:

WARNING

PESTICIDE-TREATED AREA

A pesticide application is scheduled for/was performed on:

DATE _____ TIME _____

Expected / Actual reentry time _____

For further information regarding this notice please contact:

Name

Telephone Number

Appendix 8

Date of Application _____ / _____ / _____
Month Day Year

Campus Location, Building, Area:

Applicator

Name	Phone	
License No.	Certificate No.	
Address		
City	State	Zip Code

Pesticide Product Used

Product (Brand) Name	EPA Registration No
Product type (granular, liquid, etc.)	

Attach following documents

Pesticide Label <input type="checkbox"/>	MSDS <input type="checkbox"/>	Copies of all required notices, including dates the notices were given <input type="checkbox"/>
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Date and time for placement and removal of warning signs	Placement:	Removal:
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Application Information

Time began	Time ended		
Temp	Wind Speed & Direction		
Amount of Product Applied			
Total Product Volume or Weight	Total Area of Application(s) (acres, feet, etc.)		
Product Concentration (amount per area; note units)			
Location(s) of application			
Type of Application			
Backpack <input type="checkbox"/>	Bait <input type="checkbox"/>	Boom Sprayer <input type="checkbox"/>	Crack/Crevice <input type="checkbox"/>
Other (describe)			
Did the application prove effective? Explain:			

Appendix 9 (Guidance Document)

Template for Annual IPM Report

January _____, 20XX

Report completed by IPM Plan Coordinator: Designated by the College President.

Annual Report to include the following:

- A. Pest Logs
- B. Pest Inspections
- C. Pesticide Application Documentation
- D. Training Documentation
- E. Certifications, Licenses, of College Staff
- F. Contracts with External Applicators
- G. IPM Effectiveness Assessment
- H. Recommendations for Improvements
- I. Short Written Summary of Overall Pest Management for the Year

Appendix 10 IPM for Yellowjackets and Paper Wasps



There are two types of common stinging wasps in Oregon school environments: paper wasps (*Polistes spp.* and *Mischocyttarus flavitarsis*) and yellow jackets (*Vespula spp.* and *Dolichovespula spp.*). These wasps often nest in, on, and near school structures, as well as on playgrounds and sports fields. They are also able to sting multiple times (unlike honeybees), making paper wasps and yellow jackets a significant pest for many school districts.

Colonies of both paper wasps and yellow jackets begin with a single queen each spring. The queen overwinters in various natural and man-made protected habitats. She emerges in early to mid-spring; the timing varies interannually based on weather conditions and therefore may occur as early as March in some years. Upon emerging, the queen selects a nest site, begins construction, and lays the first generation of eggs. Once the first generation of workers reaches maturity, they assume various roles including foraging, nest construction and maintenance, defense, and tending the young. The queen is then able to focus more of her energy on egg-laying and colony growth from that point on.

Paper wasp and yellow jacket colonies continue to grow in nest size and number of individuals throughout the summer, reaching a maximum nest size in August-September; however, some yellow jacket species may persist into November. In late summer colonies begin to produce a limited number of male wasps to fertilize new queens. As cooler fall weather sets in, workers and males die leaving only the inseminated queen to overwinter and begin the cycle anew the following spring.

Nests are not reused in Oregon by either paper wasps or yellow jackets. Paper wasps exhibit a high fidelity to specific nest sites, and are known to construct new nests in the same location each year. In some cases, if the old nest is still present, paper wasps may attach a new nest onto the previous year's nest.

Beyond these basic life history features, paper wasps and yellow jackets differ significantly in their biology, temperament, and particularly their management. Therefore, identification to determine which wasp type you have is a critical first step when assessing a wasp issue. [Note: bees are not wasps, and care should be taken with identification for this reason as well. Many species of bees are critical pollinators of both urban and agricultural environments.]

	Yellow Jackets 	Paper Wasps 
Appearance	Workers are ½" long; stocky body, black and yellow or black and white; anterior portion of thorax at right angle	Workers are ¾" long; thin body, long legs trail in flight; anterior portion of thorax tapers backward
Basic life cycle (inseminated queen overwinters, emerges following spring, begins new nest and colony)	Same	Same
Nest type	Encased in paper envelope, with multiple tiers of comb	Exposed, single comb attached to a surface by a thin, short
Nest location	Variable—most likely to notice and have problems with ground nests, but may be in buildings, or enclosed spaces	Highly variable- under protected eaves, in pipes, handrails, playground equipment, utility boxes, etc.
Behavior	Aggressive, likely to sting in proximity of nest	Less aggressive, less likely to sting unless provoked

Paper Wasps

While paper wasps are generally regarded as less aggressive than yellow jackets, their habit of nesting in the eaves outside of school entrances, playground equipment, inside utility boxes, etc., gives them a high level of visibility. Paper wasps have a slender body $\frac{1}{2}$ - $\frac{3}{4}$ " long. Their legs trail in flight, giving them a floaty-flier appearance that helps to differentiate them from yellow jackets and bees. The paper wasp nest is a single-layer comb that lacks a paper envelope surrounding it and is therefore completely exposed.

The nest faces downward and is attached to a surface via a slender stalk. Nest location may vary in height from head-level to more than two stories. Nest size is typically 100 cells (the European paper wasp) to 200 cells (native paper wasps), but may reach up to 400 cells in size. In ideal conditions, paper wasps may take as little as 40 days to develop from an egg to adult. Paper wasp females can and will sting if provoked (e.g., as when wasps become trapped between clothing and skin, if nest destruction is attempted, etc.)

There are several species of paper wasps in Oregon that may be found in school environments. The European paper wasp, *Polistes dominula*, was introduced to the United States east coast in the 1970s, and since spread to most areas of the west by the early 2000s. The European paper wasp is slightly smaller than other paper wasps. It is also synanthropic (associates strongly with human environments) and as such often nests in protected spaces in and on man-made structures such as areas under eaves, in and around playground equipment, bird houses, utility boxes, pipes, handrails, etc. Nesting in these types of habitats is not exclusive to the European paper wasp, but this wasp is more consistent at nesting in and around human structures and equipment than Oregon's native paper wasps.

Other species of paper wasp that may be found in school environments in Oregon include *Polistes fuscatus*, the golden paper wasp, which has narrow yellow bands and may appear overall more dark. *Mischocyttarus flavitarsis* has a long, narrow petiole (or "waist") that clearly distinguishes it from yellow jackets and other types of paper wasps. *M. flavitarsis* is more variable in its selection of nest sites. Nests located in natural habitats are commonly positioned in tight places such as cracks in rocks or the underside of rocks, boards, logs, etc. In urban environments, *M. flavitarsis* nests may be more hidden than other paper wasps'.

Paper wasps do not exhibit a preference for human foods, and are not the picnic-crashers that yellow jackets are so well known for being. Adult paper wasps frequent flowers to feed on nectar. Adults are considered a beneficial insect for their role in biological control of soft-bodied insects (including several species of caterpillar pests, aphids, etc.) and spiders, all of which they grind up and

feed to the developing wasp larvae (Cranshaw – CO State, 04/08). They have also been known to scavenge for dead insects and spiders for the young as well.

Yellow Jackets

Yellow jackets are stocky in appearance with a ½” long body length. They have a sleek look and are fast fliers. Yellow jackets may initially appear similar to bees, but yellow jackets lack the fuzzy (hairy) appearance of bees, and also do not forage for nectar on flowers. In Oregon school environments, yellow jackets include aerial (e.g., tree) nesters (*Dolichovespula* spp.) and those that most often nest in the ground, structures, or cavities (*Vespula* spp.). The two aerial, or tree-nesting, *Dolichovespula* typically seen include *D. maculate* – a black and white wasp also known as the “bald-faced hornet” – and *D. arenaria* – a yellow and black wasp that typically nests in trees.

Ground nesting (*Vespula* spp.) yellow jackets comprise the great majority of yellow jackets responsible for stinging incidents and management concerns in Oregon school environments. Perhaps the most commonly encountered ground-nester in Oregon is the Western yellow jacket, *Vespula pensylvanica*, which is native to western North America. The common yellow jacket, *Vespula vulgaris*, is also native, and in spite of its name it is less commonly encountered in urban environments. The common yellow jacket prefers to nest in the ground or logs, and is more typical of forested areas. The German yellow jacket, *Vespula germanica*, was introduced to the East coast of North America in the mid-1800s and arrived in Oregon in the mid-1990’s. Its occurrence seems to be correlated with areas of high urban population along the I-5 corridor as well as areas along the Oregon coast. While a ground-nester, the German yellow jacket also shows a preference for nesting in structures between walls, in attics or other cavities, abandoned cars, etc. German yellow jackets are behaviorally different from our native yellow jackets; they tend to be less responsive to mowing activities, wall-pounding (for wall void or attic nesters), and other forms of disturbance.

Queens select ground nests by searching for indentations in the soil, which may occur from old mammal burrows. She, and later the workers, will additionally excavate the space to make room for the growing nest. At their peak size, bald-faced hornet nests may reach several hundred individuals, and ground-nesting (or cavity-nesting) yellow jackets may reach several thousand individuals. Unfortunately, by the time cavity and ground nests become noticeable, they are quite large and more likely to sting in defense of their nest. Nests reach peak size in late summer to early fall, and colonies tend to persist longer than paper wasps. German yellow jackets, for example, reach a peak colony size in October to early November.

Yellow jackets are aggressive in their foraging habits and are known for their eager invasion of outdoor lunch areas. They are particularly fond of fish (including sandwiches) and sweet

beverages (fruit and soda). Yellow jackets will readily land on food as it is being eaten, and often crawl inside pop or juice cans to drink. They may also land on human skin to consume the salt in our perspiration. While this foraging behavior often leads to close encounters between yellow jackets and students or staff, these wasps sting less readily when foraging and away from the nest (unless swatted at or otherwise threatened). They have been documented to forage up to 165 feet from their nest and unfortunately have demonstrated a keen memory for food sources. After just one successful feeding from a student lunch or open garbage can, they may return repeatedly – even after the food source has been removed.

Wasp Management

Following identification to determine whether it is a paper wasp or yellow jacket, the threshold for the wasp should be considered. Thresholds define at what point action is taken to manage a pest. Each pest should have a threshold associated with it that is based on their ability to proliferate, cause harm to humans or the environment, damage resources / structures, and the likelihood of them coming into contact with students or staff. Thresholds may also take into consideration the values and tolerance levels of your school district, or even the individual school site.

1. Thresholds

There are numerous situational factors that may also affect thresholds and whether or not action should be taken (and what type of action that should be). Among these factors are weather and the time of year. In late summer or early fall, for example, the approaching cold weather will reduce or eliminate wasp activity for the year, so a wasp nest located in a low-traffic area of the school could be “waited out” in some cases.

Consider the following when crafting your thresholds for paper wasps and yellow jackets:

- a) Type of wasp (e.g., the level of aggression likely to be exhibited if staff or students come into contact with it).
- b) A nest versus foraging wasps. For each wasp type, it may make sense for your district to establish thresholds for foraging wasps, and another set of thresholds for the nest.
- c) Type of nest and its location on the school property (e.g., in a tree, in the ground, or in a swing set, etc.) and its likelihood to be encountered.
- d) Time of year and near-term seasonal weather.
- e) The level of wasp knowledge of students and staff, and their ability to cooperate with instructions to avoid being stung. Note: when educating staff, students, and parents about your district’s thresholds, it is important to include information about the biology of the wasp to support your choice of action. Education is often instrumental in reducing concern.

When responding to a paper wasp or yellow jacket complaint, it is therefore critical to begin by assessing the situation *in person*, knowing which wasp type you have, whether it includes foragers or a nest, etc., etc. and from there deciding whether any thresholds are being reached.

2. Preventative Maintenance

- a) Brush up, know your pest. As a facilities or maintenance personnel, learning about your pest is the single most valuable thing you can do to manage it effectively.
- b) Inspect. Regular inspections consist of walking around your structures and looking for nests tucked under eaves, in/on playground equipment, inside utility boxes, etc. Early detection and removal is less likely to result in stings of students, staff, and those removing the nest.
- c) Rodent management: collapse rodent burrows once/year – particularly in areas where there is regular rodent burrow activity and human foot traffic. This is best done December – February to avoid stirring up ground-nesting yellow jackets.

3. Chemical-Free Methods

Chemical-free methods are most effectively employed at night or near-dawn, when most wasps are in the nest and activity is at its lowest. Any action taken against a nest will incite some degree of response from the wasps that may take many hours to subside – particularly later in the season when nests are larger, and particularly in the case of yellow jackets. Therefore, any action against a nest should take place outside of regular school hours when students are not expected to return for at least several hours.

- a) Paper wasp nests that are less than 10' off the ground can simply be knocked down with a long-handled tool (e.g., a rake or shovel). Caution: you will need to do this when students are not present. If you do not have a bee suit, be prepared to move away quickly after agitating the nest. If you are unsuccessful, let the nest calm down and approach it at a later date.
- b) Vacuuming is commonly used for ground-nesting yellow jacket nests. A vacuum hose may be placed near the nest entrance. Careful observation of nest response may convey the size of the nest and therefore how long it may take (2-3 hours). Yellow jackets may begin to ignore the vacuum, so it may be effective to turn the vacuum off for 20 minutes after the first hour, and then resume vacuuming. A bee suit is strongly recommended.
- c) Soapy water poured down a nest hole, or sprayed/hosed onto a paper wasp nest. Water alone will simply bead up on the exterior of their waxy cuticle, but the soap will facilitate not only suffocation, but make it difficult for them to fly as well. This knock-down method allows you to vacuum up the wasps and remove the nest.
- d) Aerial wasp nests (those in trees, for example) may be enclosed in an extra-thick plastic bag, frozen for 24 hours, and then discarded.

4. Products and Applications

- a) Yellow jacket traps attract foraging wasps with formulated lures, soda pop, etc. While there is no scientific evidence that trapping queens reduces the number of nests, traps can be used to help draw foraging wasps away from buildings and high traffic areas.
- b) If pesticides are used, the district is responsible for following the proper posting and notification requirements, using “caution” label products only (except in cases involving a declared pest emergency), and making sure any pesticides used are applied by licensed applicators.

5. Preventative Approaches

Staff and student awareness of wasp behavior as well as the importance of sanitation is going to make any facilities and maintenance personnel job easier. A wasp “Pest Press” for staff and students is available from Oregon State University’s School IPM Program.

- a) The presence of foraging wasps (e.g., there is no identified nest) is often an educational issue. Soda (spilled or in cans), juice and other sweet beverages, and a variety of meaty or sweet foods will attract wasps. Quick clean-up is necessary, and prevention is even better given the keen memory for food sources that yellow jackets have.
- b) If foraging wasps are a recurring problem in a given area, encourage those in charge to corral food and drink to a given area of the school.
- c) Make sure trash cans have tight-fitting lids. During the fall, these lids should be hosed off regularly to discourage foraging yellow jackets.
- d) Take a proactive approach. Educate staff at the start of each school year (when wasp colonies are at their largest): who to notify for wasp complaints; who to notify in the event of spilled food and beverages outdoors; staff and students should never swat at wasps, but rather move away slowly from aggressive foragers (swatting is perceived as a threat and may induce stinging); avoiding the color yellow and perfumes in late summer through early fall may also help discourage wasps from landing on students and staff.

For further reading on paper wasps or yellow jackets, please visit:

- University of California yellow jacket curriculum:

<http://apps.cdpr.ca.gov/schoolipm/training/curricula/yellowjackets.pdf>

- Washington State University Cooperative Extension publication: Yellow Jackets and Paper Wasps.

<http://www.pesticide.org/solutions/home-and-garden-toolbox/pest-solutions/yellow-jackets>

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Hiring an Outside Contractor

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(The following guidance is excerpted and modified from NC State University's IPM North Carolina Schools Manual)

A. In-House vs. Contractor: Advantages & Disadvantages

Schools in Oregon receive pest control services from pest control companies or trained school maintenance employees. Both pest control companies and school employees with the proper training can successfully perform Integrated Pest Management (IPM). Some school districts contract pest control companies to provide pest control services. Others combine in-house and contracted services and some use in-house services exclusively. Each approach has advantages and disadvantages therefore school officials should decide which one best suits the school district's resources and needs.

Pest Control by In-House Personnel

Advantages

1. Compared to contracted pest control services, school pest management personnel may find it easier to communicate and develop a rapport with students, teachers, staff and other school employees. Cooperation with all individuals in the school is needed for the program to succeed.
2. When a school employee performs pest control services, schools may find it efficient to incorporate some pest control activities with other maintenance activities performed by certified in-house employees, as long as the employee is a certified pest control operator.

3. Because in-house personnel are always around the schools, they are more likely to identify pest problems before they become too serious.
4. When in-house personnel perform pest control, there is no need to develop a bid invitation and therefore the potential difficulty of choosing a pest control firm based on reliability rather than simply on lowest bid.
5. Maintenance or buildings and grounds supervisors have greater control over personnel selection and performance, and subsequently the quality of pest control services.

Disadvantages

1. There is need to find safe storage sites for pesticides and pest control equipment. The potential liability of the district in regard to pesticide use is probably higher in an in-house program.
2. If a re-entry time interval is needed which is greater than that listed on the label, overtime expenses could be incurred.
3. Certifying an employee to apply pesticides in a school will require time and a charge for the certification exam. In addition, all pesticide applicators will need to maintain ongoing certification by attending continuing education events.

Contracted Pest Control Services

Advantages

1. Professional pest control personnel usually have a broader range of experience, on-going training, and greater familiarity with the full range of treatment techniques and potentially expensive equipment available to safely and effectively control pests. By contracting with an outside pest control company, the School district eliminates or reduces the need to train and maintain pesticide applicator certification for employees, although schools are encouraged to have certified applicators who can better evaluate the quality of the work performed by the contractor.
2. Using contracted services can reduce potential liability of the school system with regard to the use and storage of pesticides. The need for locating a special storage site for pesticides is eliminated.

3. There are times when pest control activities must be performed after-hours or on weekends to meet reentry interval requirements. By hiring a contractor the school district avoids the need for overtime expenses.
4. Contracted pest control services can provide school administrators with the flexibility of using specialized and professional labor on an “as-needed” basis, as opposed to investing in the development of in-house capabilities that may not be used on a continuous basis.

Disadvantages

1. Communication between contracted individuals and school employees may not be as easily developed as in an in-house program.
2. School districts must develop a bid invitation for contracted services and choose a pest control firm based on IPM expertise and reliability rather than simply on lowest bid.

B. Bid Specifications – Important Things to Remember

What to Look for When Choosing and Evaluating an IPM Contractor

- Is the contractor prevention-oriented or reactive-oriented?
- Is the contractor knowledgeable about the damage caused by each type of pest?
- Does the contractor inspect for pest-conducive conditions and monitor population levels at least monthly?
- Does the contractor use a flashlight during inspections?
- Does the contractor use monitoring traps for insects?
- Are the traps checked and changed according to IPM Plan schedule?
- Does the contractor explain ways to prevent further pest outbreaks?

Importance of Pest Management Bid Specifications

Thorough, stringent bid specifications help reduce the problem of unrealistically low bids by firms that are unable or unwilling to provide the quality of work your school district should expect. The selection of a pest control company should not be based solely or primarily on lowest bid. Just as with other important purchases/contracts, the quality of the expected service is extremely important.

Essential Items in IPM Bid Specifications

Some elements for IPM bid specifications are listed below:

- On-site inspections: Prospective bidders should conduct a thorough on-site inspection before submitting a bid. This allows potential bidders to view firsthand the facilities and pest problems, so bidders can make a realistic estimate of service needed and the time required for these services.
- IPM Plan: The bid should spell out exactly which sections of the district's IPM Plan will be carried out by the contractor, and how these will be coordinated and communicated with school staff.
- Minimum service times: The minimum amount of time that a pest control technician should take per scheduled visit can be defined by the school district in the bid. Bidders should understand that minimum service times are an expectation of the contract, and any failure of the contractor to meet these minimum service times should be grounds for cancellation of the contract by the school district.
- Monitoring tools: The contractor should use appropriate monitoring tools (flashlight, sticky insect monitoring traps, etc.) and procedures mentioned in the IPM Plan on a regular basis to find pest infestations and assess the need for corrective action.
- Approved Pesticides: Only products from the district's list of approved pesticides shall be used. Districts should receive from the bidder copies of labels and Material Safety Data Sheets (MSDS) for all pesticides to be used on the school district property.
- Reduced-risk formulations and methods: The use of baits, bait stations, and crack-and-crevice or void treatments are the only approved treatments indoors. Aerosol, broadcast, spot, and baseboard treatments are prohibited except when a pest emergency as defined in the district's IPM Plan is declared. All applications must follow the requirements and protocols outlined in the Plan.

The above provisions and others are specified in the following set of model bid specifications. **These specifications are strongly recommended as a model for school districts/colleges attempting to implement an indoor IPM program.** School districts may want to incorporate some elements of the model contract into existing bid specifications; others may adopt the requirements in total, with additions as suggested by their IPM coordinator, purchasing officer or other business personnel. Many standard clauses are omitted from the following contract to save space. If there is a conflict between the model bid specifications and the school district's/college's usual bid process, the district/college should defer to its regular bidding process.

(The following bid is excerpted and modified from the Texas Agricultural Extension Service Publication B-6015)

C. Sample Bid: Integrated Pest Management Plan

Contract Guide Specification

1. GENERAL

Description of Program: This specification is part of a comprehensive Integrated Pest Management (IPM) Plan for the premises listed herein. IPM is a process for achieving long-term, environmentally sound pest suppression and prevention through the use of a wide variety of technological and management practices). Control strategies in an IPM program include:

- Facility inspections to identify pest harborage and presence of conditions favorable to pests.
- Proper identification of pests and an understanding of pest biology and behavior.
- Structural and procedural changes to reduce food, water, harborage, and access used by pests.
- A preference for non-pesticide technologies such as trapping and monitoring devices.
- Use of low-risk pesticide compounds, formulations, and selection of application methods that present a reduced potential hazard to humans and the environment.
- Coordination among all facilities management programs that have a bearing on the pest control effort.

Contractor Service Requirements: The Contractor shall furnish all supervision, labor, materials, and equipment (excluding insect light traps, air curtains, and other major expense items unless requested by the contract administrator) necessary to accomplish the inspection, monitoring, trapping, pest management (including pesticide application if needed, but excluding sanitation and building maintenance), and pest removal components of the IPM Plan. The Contractor shall also provide detailed, site-specific recommendations for structural and procedural modifications to aid in pest prevention.

2. PESTS INCLUDED AND EXCLUDED

PESTS INCLUDED: The Contractor shall adequately suppress the following pests:

- A. Indoor populations of rodents, insects, arachnids, and other arthropods. For the purposes of this contract, rodents include Norway rat, roof rat and house mouse. There may be an additional

charge for the control of certain species because of increased material and/or labor expenses such as bed bugs and other pests not specified in the contract.

- B. Outdoor populations of potentially indoor-infesting species that are within the property boundaries within _____ yards of the specified buildings.
- C. Nests of stinging insects within the property boundaries of the specified buildings.
- D. Individuals of all excluded pest populations that are incidental invaders inside the specified buildings.
- E. Populations (or individual animals) of vertebrates (other than rodents), including birds and bats. For vertebrate pests, contractor should have a qualified person on staff to control them or recommend a qualified wildlife damage control agent.

PESTS EXCLUDED: The following pests are excluded from this contract:

- 1. Termites and other wood-destroying organisms.
- 2. Mosquitoes.
- 3. Pests that feed on outdoor vegetation

3. INITIAL BUILDING INSPECTIONS

The Contractor shall complete a thorough, initial inspection of each building or site at least _____ working days prior to the starting date of the contract. The purpose of the initial inspections is for the Contractor to evaluate the pest control needs of all locations and to identify problem areas and any equipment, structural features, and other conditions or management practices that are conducive or contributing to pest infestations. Access to building space shall be coordinated with the _____.

**Contact information for each facility (with address and phone number) is attached.*

4. THE INTEGRATED PEST MANAGEMENT CONTRACT GUIDE FOR FUTURE BID DOCUMENTS:

The Contractor shall submit to _____ an Integrated Pest Management (IPM) Contract at least _____ working days prior to the starting date of the contract. Upon receipt of the IPM Contract, the _____ will render a decision regarding its acceptability within _____ working days. If aspects of the IPM Contract are incomplete or disapproved, the Contractor shall have _____ working days to submit revisions. The Contractor shall be on-site to perform the initial service visit for each building within the first _____ working days of the contract.

The IPM Contract shall consist of five (5) parts as follows:

A. *Proposed Methods for Pest Identification, Monitoring and Detection:* The Contractor shall provide information on procedures to be used to identify pests, as well as describe methods and procedures to be used for identifying sites of pest harborage and access, for making objective assessments of pest population levels, and for determining the need to implement specific control measures throughout the term of the contract.

B. *Description of any Structural or Operational Changes That Would Facilitate the Pest Control Effort:* The Contractor shall describe site-specific solutions for observed sources of pest food, water, harborage, access or other conditions conducive to pest problems.

C. *Proposed Materials and Equipment for Service:* The Contractor shall provide the following information:

1. A list of all pesticide products to be used. These must be on the school district's approved list of low-impact pesticides. They shall include each product's brand name, common name of the active ingredient.
2. A list of the brand names of pesticide application equipment, rodent bait boxes, insect and rodent trapping devices, pest monitoring devices, pest detection equipment, and any other pest control devices or equipment that may be used to provide service.
3. The current label (and labeling) and Material Safety Data Sheet (MSDS) for each pesticide product on the list referenced in C1.

D. *Commercial Pesticide Applicator Documentation*: The Contractor shall provide the following documents

1. The phone number for the currently designated state poison control center.
2. The names and phone numbers of at least two individuals who are designated as the primary and secondary 24-hour contacts for information concerning any aspects of the pest control service being provided.
3. A photocopy of the valid Oregon Pesticide Applicator License(s) under which all pest control is to be performed.
4. A photocopy of the Contractor's valid Certificate of Insurance.
5. A list of all Contractor employees who will be performing on-site service under this contract; this list shall include the employee's name and a statement of whether the employee is a licensed pesticide applicator or trainee.

E. *Commercial Pesticide Applicator Documentation*: The Contractor shall be responsible for carrying out work according to the approved Pest Control Plan. The Contractor shall receive the concurrence of the _____ prior to implementing any subsequent changes to the approved Pest Control Plan, including changes in on-site service personnel and any additional or replacement pesticides.

5. RECORD KEEPING

The Contractor shall be responsible for maintaining a pest management logbook for each building or site specified in this contract. These logbooks shall be kept on-site and accessible to all site staff and the _____. The Contractor shall maintain or update the contents of these logbooks on each visit. Each logbook shall contain at least the following items:

- A. *Integrated Pest Management Contract*: A complete copy of the Contractor's approved IPM Contract.
- B. *Pest Log*: A school-district-approved form that permits school personnel to record the location any pest sightings and Contractors any action taken. The _____ will review and approve the design of this form prior to its distribution and use at the facilities. The _____ will be responsible for informing and educating all site staff about methods for reporting pest observations in the log.

C. *Contractor's Service Report*: The Contractor shall document site-specific pest findings and subsequent control measures performed during the service visit. A separate form is not required if the Pest Log is designed to incorporate this information.

6. THE MANNER AND TIME TO CONDUCT PEST MANAGEMENT ACTIVITIES

- A. *Time Frame of Service Visits*: The Contractor will negotiate with _____ regarding time frame of service visits. It is imperative that the Contractor interacts with school staff during regular school hours to get a better understanding of the local situation and educate staff when necessary. It is also important that the Contractor conduct those pest management activities that may cause class disruption after school hours. All contractor employees shall adhere to all policies for notifying local personnel that the employee is onsite and working in the building. When it is necessary to perform work outside of the regularly scheduled service time set forth in the IPM Plan, the Contractor shall notify the _____ at least _____ day in advance except when the _____ requests emergency service as described in Section 7 of this contract. The _____ shall approve such changes before any work is done.
- B. *Safety and Health*: The Contractor shall observe all applicable safety precautions throughout the performance of this contract. All work shall be in strict accordance with all applicable Federal, state, and local safety and health requirements, as well as specific pest control product label instructions. Where there is a conflict between applicable regulations, the most stringent will apply.
- C. *Compliance*: The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work. The contractor's liability insurance must be enforced throughout the term of this contract.
- D. *Special Entrance*: Certain areas within some buildings may require special instructions for persons entering them. Any restrictions associated with these special areas will be explained by the _____. The Contractor shall adhere to these restrictions and incorporate them into the IPM Contract.
- E. *Uniforms and Protective Clothing*: All Contractor personnel working in or around buildings specified in this contract shall wear distinctive uniform clothing and a photo ID badge. The Contractor shall determine the need for and provide any personal protective items required for the safe performance of work. Protective clothing, equipment, and devices shall, as a minimum, conform to U.S. Occupational Safety and Health Administration (OSHA) standards and to any specific label requirements for the products being used.
- F. *Vehicles*: Vehicles used by the Contractor shall be identified in accordance with state and local regulations. While on-site, all service vehicles shall be secured to prevent unauthorized access to chemicals and equipment. Service vehicles shall be equipped with appropriate pesticide spill control equipment in accordance with state and federal regulations. All pesticides on contractor vehicles shall remain locked or remain inaccessible while vehicles are unattended.

7. SPECIAL REQUESTS AND EMERGENCY SERVICE

On occasion, the _____ may request that the Contractor perform corrective, special, or emergency services that are beyond routine service requests. The Contractor if possible shall respond to these exceptional circumstances and complete the necessary work within a timeframe approved by the _____, which will minimize disruption of the daily activities of the building.

8. CONTRACTOR PERSONNEL

Throughout the term of this contract, all Contractor personnel providing on-site applications must have a commercial applicators license in accordance with SB 637. They must also have specific IPM training. In addition, the contractor shall run criminal background checks and not allow any individual with a felony within the last 5 years to service the property.

9. INSECT CONTROL

The priority for insect control will be the use of non-pesticide methods. The Contractor shall use non-pesticide methods of control wherever possible. For example:

- Portable vacuums rather than pesticide sprays shall be the standard method for initial cleanouts of cockroach infestations and the control of spiders and other miscellaneous pests.
- Trapping devices, such as light traps, shall be the standard method for indoor fly control. The Contractor will make recommendations to the _____ regarding the purchase and installation of such traps.

Pesticides can only be used after following the protocols of the district's IPM Plan. When pesticides are used, the Contractor shall use pesticides on the district's approved list of low-impact pesticides and employ reduced-risk methods of application.

- Monitoring:* Monitoring devices (Sticky traps, light traps, etc) shall be used to guide decisions on appropriate pest control measures and subsequently to evaluate the effectiveness of these measures.
- Insecticide Bait Formulations:* Non-volatile bait formulations shall be the first choice for cockroach and ant control. If possible, baits shall be applied or placed in areas that cannot be accessed by children or building occupants.

- C. *Application of Insecticides to Cracks and Crevices*: As a general rule, the Contractor shall apply liquid/dry insecticide formulations as “crack and crevice” treatments only, defined in this contract as treatments in which the formulated insecticide is applied to hidden or protected areas that are used as harborage sites by pests.
- D. *Application of Insecticides to Exposed Surfaces*: Application of insecticides to exposed surfaces shall be restricted to a pest emergency as defined in the district’s IPM Plan where no alternative effective measures are practical. The Contractor shall obtain approval of _____ prior to any application of insecticide to an exposed surface or any space spray treatment. No surface application or space spray shall be made while the treatment site is occupied. The Contractor shall take all necessary precautions to ensure occupant and employee safety, and all necessary steps to ensure the containment of the pesticide to the site of application.
- E. *Space sprays*: Application of pesticides as space sprays (“fogging”) are strictly prohibited, except when a pest emergency as defined in the district’s IPM Plan is declared. The application must follow the same restrictions outlined for surface sprays. Space sprays must be timed to allow the specific treatment site to remain unoccupied for a minimum of 24 hours. The Contractor shall be responsible for ventilating the treatment site in accordance with instructions on the product label before school personnel reenter the site. The _____ will assist the Contractor to secure the treatment site to prevent any unauthorized reentry to the area prior to ventilation or before any re-entry period specified on the product label, and to arrange for appropriate cleaning of exposed surfaces by _____ employees before the site is free for general use.

10. RODENT CONTROL

- A. *Indoors trapping*: As a general rule, rodent control inside buildings shall be accomplished with trapping devices only. All such devices shall be placed so as to conceal them from general view, make them inaccessible to building occupants, and to protect them from any adverse effects of routine cleaning and other operations.
- B. *Trapping devices* shall be checked on a schedule approved by the _____. The Contractor shall be responsible for disposing of all trapped rodents and all rodent carcasses in an appropriate manner.
- C. *Use of Rodenticides*: In exceptional circumstances, when rodenticides are deemed essential for adequate rodent control inside buildings, the Contractor shall obtain approval of the _____ prior to making any interior rodenticides treatment. ONLY block (paraffin-based or other types) rodenticides shall be used. Pellet/pack bait formulations and packaging shall not be used in/around school buildings. All bait shall be placed in EPA-approved tamper-resistant bait boxes that can be secured to a surface.

D. *Use of Bait stations:* All bait stations shall be maintained in accordance with EPA and regulations, with an emphasis on the safety of non-target organisms. The Contractor shall adhere to the following five (5) points:

1. All bait stations shall be placed out of the general view, in locations where they will not be disturbed by routine operations.
2. The lids of all bait stations shall be securely locked or fastened shut.
3. All bait boxes shall be securely attached or anchored to floor, ground, wall, or other immovable surface, so that the station cannot be picked up or moved by unauthorized personnel.
4. Bait shall always be secured in the feeding chamber of the station and never placed in the runway or entryways of the stations where it could be removed or dislodged.
5. All bait stations shall be labeled with the Contractor's business name and address, and dated by the Contractor's technician at the time of installation and each servicing.

E. *The locations of all trapping devices and baiting stations* will be recorded in the site's Pest Log. The Contractor shall record all changes/additions to this information before leaving the site during that service visit. The Contractor will provide the _____ with a key and instructions for opening bait stations in the event of an emergency.

11. USE OF PESTICIDES

The contractor shall be responsible for application of pesticides according to the label and all additional labeling. All pesticides used by the Contractor must be registered with the U.S. Environmental Protection Agency (EPA) and the Oregon Department of Agriculture. Transport, handling, and use of all pesticides shall be in strict accordance with the manufacturer's label instructions and all applicable Federal, state, and local laws and regulations. The Contractor shall adhere to the following rules for pesticide use:

- A. *Minimization of Risk:* Where pesticide use is necessary, the Contractor shall emphasize "reduced risk measures", i.e., the Contractor shall employ materials, quantities and application methods that minimize the risk or hazard of exposure to the applicator, building occupants, and the environment in general. The Contractor shall not give any pesticides to any site personnel for application to the site.
- B. *Selection of pesticide products:* Only products from the district's approved list of low-impact pesticides shall be used.
- C. *Approved Products:* The Contractor shall not apply any pesticide product that has not been included in the IPM Contract or has not been approved in writing by the IPM Coordinator or other designated personnel. Any additions to the list of approved pesticides must be submitted to the IPM Coordinator five (5) working days prior to the proposed date of use. The IPM Coordinator

shall render a decision on the proposed addition within three (3) working days. Prior to the use of any new approved pesticide products, the Contractor shall provide product labels, labeling and MSDS in the logbooks of each site where the products are to be used.

- D. *Pesticide Storage*: The Contractor shall not store any pesticide product in the buildings specified in this contract.
- E. *Application by Need*: Routine pesticide applications will not be employed. Application of pesticides to any interior or exterior area shall be based on visual inspection or monitoring devices indicating the presence of pests in that specific area and the need to apply a pesticide, as specified in the district's IPM Plan.
- F. *Approved Applicators*: Only Contractor employees shall apply pesticides under the terms of this contract. The Contractor shall not provide pesticide products to non-certified school employees for their use in/around the building and property.

12. VERTEBRATE PEST CONTROL (OTHER THAN COMMENSAL RODENTS)

The following terms of the contract apply only if the Contractor has agreed to be responsible for vertebrate pest control.

- A. *General Vertebrate Pests*: The Contractor shall be responsible for the control of miscellaneous vertebrates, including snakes, raccoons, and skunks. Where state, county or local regulations require the issuance of a wildlife depredation permit for the taking of such vertebrates, the contractor shall arrange for such permits. Subsequent to the issuance of the depredation permit, the Contractor shall take or arrange with a state-licensed Wildlife Damage Control Agent (WDCA) to take such vertebrates in accordance with all state and local wildlife regulations. If the WDCA is not an employee of the contractor, then the Contractor shall inform the _____ in advance the name of any WDCA to be used for such work. The cost for these services will be negotiated with the contractor separately from this contract.
- B. *Bat and Bird Populations*: Situations that require more extensive exclusion methods, such as the repairs to exclude bats from established roosting sites within buildings, or the installation of mesh, pointed wire or other devices to exclude birds from roosting will be negotiated with the Contractor separate from this contract. The proper removal/cleanup of animal feces ("guano") may be included as part of the terms of a separate specific contract.

13. STRUCTURAL MODIFICATIONS AND RECOMMENDATIONS

Throughout the term of this contract, the Contractor shall be responsible for advising the _____ about any structural, sanitary, or procedural modifications that would reduce pest food, water, harborage, or access. The Contractor will not be held responsible for carrying out structural modifications as part of the pest control effort, unless both parties agree upon such modifications. Minor applications of silicone sealant and other sealing materials by the Contractor to eliminate pest harborage or access may be approved by _____ on a case-by-case basis. The Contractor shall obtain the approval of the _____ prior to any application of sealing material or other structural modification.

14. PROGRAM EVALUATION

The _____ will continually evaluate the progress of this contract in terms of effectiveness and safety, and will require such changes as are necessary. The Contractor shall take prompt action to correct all identified deficiencies.

15. QUALITY CONTROL PROGRAM

The Contractor shall establish a complete quality control program to assure the requirements of the contract are provided as specified. Within _____ working days prior to the starting date of the contract, the Contractor shall submit a copy of his program to the Contracting Officer.

The program shall include at least the following items:

- A. *Inspection System:* The Contractor's quality control inspection system shall cover all the services stated in this contract. The purpose of the system is to detect and correct deficiencies in the quality of services before the level of performance becomes unacceptable and/or the _____ identifies the deficiencies. For the duration of this contract, the contractor shall carry out such inspections on a quarterly basis.
- B. *Checklist:* A quality control checklist shall be used in evaluating contract performance during regularly scheduled and unscheduled inspections. Every task shall be included on the checklist for every building or site serviced by the Contractor.
- C. *File:* A quality control file shall contain a record of all inspections conducted by the Contractor and any corrective actions taken. The file shall be maintained throughout the term of the contract and a copy provided to the _____.

D. *Inspector(s)*: The Contractor shall state the name(s) of the individual(s) responsible for performing the quality control inspections.

E. (OPTIONAL). The contractor may use an electronic system of bar codes and scanning systems to record such information. Such systems can facilitate the tracking of time “In and Out” of technicians and the sanitation condition of the facility. These records can allow the contractor to track the process and ensure performance at the facility.

16. _____ College’s Maintenance Address and Contacts

For questions concerning specifications, or to preview facilities, contact _____ at the above numbers. The _____ college reserves the right to reject any or all bids for any or no reason, and to waive informalities.

Appendix 12 (Additional References and Source Materials)

References and Source Materials

Used in the Preparation of Model IPM Plan for Oregon Schools (accessed 5/1/2012)

School IPM 2015

(Exhaustive list of resources and web links)

http://www.ipminstitute.org/school_ipm_2015/resources.htm

Outdoor IPM for Maine Schools

(Good basic, general manual on IPM for outdoors)

<http://www.maine.gov/agriculture/pesticides/schoolipm/pdf/outdooripm.pdf>

Portland Public Schools IPM Program Manual

(Click on “District’s IPM program manual” link in second-to-last paragraph)

<http://www.pps.k12.or.us/departments/facilities/3416.htm>

Eugene School District 4J Landscape Management

(Matrices of hierarchical steps to manage various outdoor pests)

<http://www.4j.lane.edu/facilities/pesticide>

Portland Parks & Recreation IPM Program

(A detailed “Pesticide Spill Response” section begins on page 29)

<http://www.portlandonline.com/shared/cfm/image.cfm?id=116237>

Salt Lake City School District IPM Plan

(click on “SLCSD IPM Plan 2010” link)

<https://aal.slcschools.org/pls/apex/f?p=118:40:1695263352950185>

California School IPM Guidebook, California Department of Pesticide Regulation

(Has sample chart on injury/action levels. Various sample forms and examples in appendices)

http://apps.cdpr.ca.gov/schoolipm/managing_pests/guidebook.cfm

North Carolina State University IPM for Schools & Child Care Facilities

(“IPM for North Carolina Schools Manual” link goes to well-written basic manual. Part Four has good information on how to develop bid invitations for IPM services)

<http://schoolipm.ncsu.edu/resources.htm>

Appendix 13 (State of Oregon Authorized Low-Impact Pesticide List)

Low-Impact Pesticide List

List of products that meet the requirements of a Low-Impact Pesticide as required in ORS 634.700 – 634.750.

After receiving requests from several members of the Oregon School Facilities Management Association (OSFMA), the OSU School IPM Program e-mailed all members to offer assistance (via an OSU toxicologist with expertise in pesticide toxicology) with creating their “low-impact” pesticides lists. Members were asked to provide the active ingredient, EPA registration number, and product name of any “caution” labeled products they were using (or considering using) for the toxicologist to review.

Below is a list of the reviewed products that meet the requirements of the law, as well as abridged comments from the reviewer (for complete comments and the list with complete background information, see http://ipmnet.org/Tim/IPM_in_Schools/new_ORIGINAL_low-impact_review.pdf).

We will periodically review future requests (that include the active ingredient, EPA registration number, and product name of “caution” labeled products) from school IPM coordinators who have completed the OSU School IPM Program’s IPM coordinator training, and post updates to this list on our website.

Abridged Reviewer Comments:

Using the NPIC Pesticides and Active Ingredient Retrieval System, I checked the EPA registration numbers for each product. I then used EPA’s publication “Chemicals Evaluated for Carcinogenic Potential” to assign carcinogen classifications. For those active ingredients not classified in this 2006 publication I used other EPA sources, such as the Registration Eligibility Determinations or Federal Register Notices on the establishment of tolerances.

Signal words and carcinogen classification for the active ingredients on the review list were compared to language in ORS 634.705 Adoption of integrated pest management plan and related provisions; exceptions; low-impact pesticide list, Section (5), which states:

A governing body shall adopt a list of low-impact pesticides for use with the integrated pest management plan. The governing body may include any product on the list except products that:

- (a) Contain a pesticide product or active ingredient that has the signal words “warning” or “danger” on the label;
- (b) Contain a pesticide product classified as a human carcinogen or probable human carcinogen under the United States Environmental Protection Agency 1986 Guidelines for Carcinogen Risk Assessment; or
- (c) Contain a pesticide product classified as carcinogenic to humans or likely to be carcinogenic to humans under the United States Environmental Protection Agency 2003 Draft Final Guidelines for Carcinogen Risk Assessment. [2009 c.501 §3]

Labels for all products on the review list have the signal word “Caution”. No products on the list have a carcinogen classification under the 1986 Guidelines of “human carcinogen” or “probable human carcinogen”. No products on the list have a carcinogenic classification of “carcinogenic to humans” under the 2003 draft guidelines.

List of “low-impact pesticides” that meet the requirements of ORS 634.700 – 634.750

Product Name	Formulation	EPA Registration #	Active Ingredient
Advion Ant Gel	Bait Gel	352-746	Indoxacarb
Advion Cockroach Gel Bait	Bait Gel	352-652	Indoxacarb
Aquamaster	Liquid	524-343 (-ZF)	Glyphosate, isopropylamine salt
Bee Bopper II, ARI Wasp and Hornet Killer	Pressurized liquid	7754-44	Tetremethrin d-Phenothrin
Casoron 4G	Granular	400-168	Dichlobenil
Crossbow	Emulsifiable Concentrate	62719-260-5905	2,4-D, butoxyethyl ester Triclopyr, butoxyethyl ester
K-Orthine Dust	Dust	432-772	Deltamethrin
Delta Dust	Dust	28293-322	Deltamethrin
Demand G Insecticide	Granular	100-1240	Lambda-cyhalothrin
The Andersons 0.25% Granular Dithiopyr Herbicide	Granular	9198-213	Dithiopyr
EcoEXEMPT G Granular Insecticide	Granular	Exempt	Eugenol (clove oil) Thyme oil
EcoEXEMPT IC-2 Insecticide Concentrate	Concentrate	Exempt	Rosemary Oil
EcoPCO WP-X Wettable Powder Insecticide	Wettable Powder	67425-25-655	Pyrethrins 2-Phenylethyl propionate Oil of thyme
Envoy Plus	Emulsifiable Concentrate	59639-132	Clethodim
Generation mini blocks	Pellets/tablets	7173-218	Difethialone
Gourmet Liquid Ant Bait	Impregnated Materials	73766-2	Disodium Octaborate Tetrahydrate
Grant's Ant Control A bait stations	Impregnated Materials	1663-33	Hydramethylnon
Hi-Yield Super Concentrate Kill-Zall II	Soluble Concentrate	42750-61-7401	Glyphosate, isopropylamine salt
InTice Thiquid ant bait	Soluble Concentrate	73079-7	Sodium Tetraborate Decahydrate
Landmaster BW	Soluble Concentrate	42750-62	2,4-D, isopropylamine salt Glyphosate, isopropylamine salt
Maxforce FC Professional Insect Control Roach Killer Bait Gel	Bait gel	432-1259	Fipronil
Maxforce Professional Insect Control Roach Killer Bait Gel	Bait Gel	432-1254	Hydramethylnon
Milestone VM Plus	Emulsifiable Concentrate	62719-572	Aminopyralid, triisopropanolamine salt Triclopyr, triethylamine salt

MotherEarth D Pest Control Dust	Dust	499-509	Diatomaceous Earth (amorphous Silica)
MotherEarth Granular Scatter Bait	Granular	499-515	Boric Acid
MotherEarth Wasp & Hornet	Pressurized Liquid	499-519	d-Limonene
Optigard Ant Gel Bait	Ready-to-Use Solution	100-1260	Thiamethaxom
Orange Guard	Ready-to-Use Solution	61887-1-AA	d-Limonene
Patrol Insecticide	Emulsifiable Concentrate	100-1066	Lambda-cyhalothrin
Phantom Termiticide-Insecticide	Emulsifiable Concentrate	241-392	Chlorfenapyr
QuickSilver Herbicide	Emulsifiable Concentrate	279-3301	Carfentrazone-ethyl
Raid wasp and hornet spray	Pressurized Liquid	4822-553	Cypermethrin Prallethrin
Rescue W H Y spray for wasp, hornet, & yellowjacket nests	Pressurized Liquid	Exempt	Lemongrass oil Clove oil (eugenol) Rosemary oil Geranium oil
Rodeo	Soluble Concentrate	62719-324	Glyphosate, isopropylamine salt
Round Up Pro Max	Soluble Concentrate	524-579	Glyphosate, potassium salt
Safari 20 SG Insecticide	Emulsifiable Concentrate	33657-16-59639	Dinotefuran
Safer Brand Wasp and Hornet Killer	Liquid Aerosol	36488-47	d-Limonene Pyrethrins Potassium Salts of Fatty Acids Indian Palmarosa Oil
Snapshot 2.5 TG	Granular	62719-175	Trifluralin Isoxaben
Talstar P Professional Insecticide	Emulsifiable Concentrate	279-3206	Bifenthrin
Temprid SC Insecticide	Soluble Concentrate	432-1483	Imidacloprid beta-Cyfluthrin
Termidor SC	Soluble Concentrate	7969-210	Fipronil
Terro Liquid Ant Baits	Ready-to-Use Solution	149-8	Sodium Tetraborate Decahydrate
TZone	Emulsifiable Concentrate	2217-920	Dicamba 2,4-D, 2-ethylhexyl ester Triclopyr, butoxyethyl ester Sulfentrazone
Whitmire PT 515 Wasp Freeze	Pressurized Liquid	499-362	d-trans Allethrin d-Phenothrin

² International Agency for Research on Cancer (IARC) found that there is inadequate evidence to link amorphous silica with cancer effects in humans or test animals. (<http://www.epa.gov/oppsrrd1/REDs/factsheets/4081fact.pdf>).

The following products have been proposed by local Eugene area providers and submitted for considerations on future updates of the above list. Dave Willis (LCC IPM Coordinator has forwarded this list to the Oregon State University, State of Oregon IPM Program Coordinator):

Sprague Pest Control Proposed Products:

Product Name	Formulation	EPA Reg. #	Active Ingredient
DuPont Arilon	Water Dispersible Granule	352-776	Indoxacarb
ECO Exempt Jet Wasp	Pressurized Liquid	Exempt	Rosemary Oil
Nibor D	Wettable powder	64405-8	Disodium Octaborate Tetrahydrate
Suspend Polyzone	Microscopic polymer film	432-1514	Deltamethrin
Zenprox EC	Emulsifiable Concentrate	2724-804	Etofenprox
Intice Sweet Ant Gel	Bait Gel	73079-1	Orthoboric acid (boric acid)
Intice Roach Bait	Bait Gel	73079-5	Orthoboric Acid
Contrac All Weather Blocks	Rodent Bait Block	12455-79	Bromadiolone
Terad3 Blox	Rodent Bait Block	12455-106	Cholecalciferol (Vitamin D)

Appendix 14 Definitions

Definitions:

Pesticide:

A substance that is used to kill, harm, or repel a pest; includes herbicides, insecticides, fungicides, rodenticides, and others.

General-Use Pesticide:

May be bought over-the-counter without a license; includes household pesticides.

Restricted-use pesticide:

May be bought only by someone with a pesticide license and may only be used by a licensed pesticide applicator or a person they supervise. These pesticides are more dangerous than general-use pesticides. A text box above the product name on the first page of the label will tell you if it is a restricted-use pesticide.

Oregon Department of Agriculture (ODA):

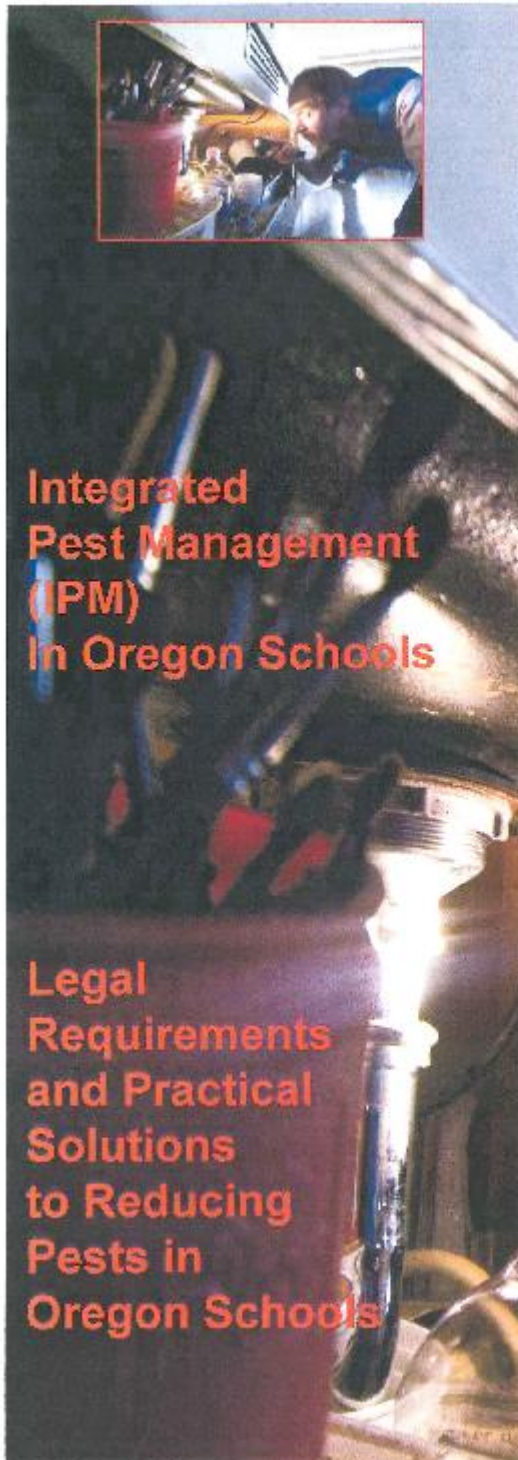
The Oregon Department of Agriculture (ODA) is the state agency responsible for pesticide licensing, registration, and laws. ODA may also regulate federal pesticide laws.

Industrial, Institutional, Health and Structural (I.I.H.S.):

The Industrial, Institutional, Health and Structural (I.I.H.S.) are a major category of commercial or public pesticide applicator licensing.

A “Pest” is defined as:

- A. An insect or other arthropod;
- B. A weed, moss, slime, or mildew, or a plant disease caused by a fungus, bacterium, or virus;
- C. A nematode, snail, slug, rodent, or predatory animal;
- D. A bacteria, spore, virus, fungus, or other microorganism that is harmful to human health; or
- E. Other forms of plant or animal life that may infest or be detrimental to vegetation, humans, animals, structures, managed landscapes or other human environments.



What Is IPM?

IPM stands for "Integrated Pest Management", a common-sense strategy that focuses on long-term solutions to pest problems based on better understanding of pest biology with minimum impact on human health and the environment.

In an IPM approach, pesticides are not relied upon as the only response to a pest problem, but are part of an integrated approach with other tactics. When needed, only low-impact products are used.

IPM solutions are based on understanding pest biology and behavior. Key concepts:

- Long-term solutions
- Prevention and avoidance through pest barriers such as window screens, caulked cracks, door sweeps, and good sanitation
- Monitoring and identification of pests
- Treatment: A combination of mechanical (traps), physical (removal), and when necessary, chemical methods.

A school that uses an IPM approach can **reduce long-term costs** by dealing with the causes of the problem, not just the symptoms. This approach leads to **healthier children** and a **healthier environment**.



What Does The Law Require?

Effective July 1, 2012, ORS 634.740 requires **all public and private K-12 schools and community colleges** to have an IPM Plan in place, a designated IPM Coordinator, and a list of acceptable low-impact pesticides.

The IPM Plan must **give preference to the use of nonchemical pest control measures** by focusing on the prevention of pest problems by working to reduce or eliminate conditions that attract pests. Pests need food, water, and shelter. Good housekeeping and sealing up access points greatly reduces pests.

A plan **must include "regular monitoring and inspections** to detect pests, pest damage and unsanctioned pesticide usage." The law requires staff be educated "about sanitation, monitoring and inspection and about pest control measures." The OSU School IPM Program can help (see back of this pamphlet).

Any plan **must exclude "the application of pesticides on a routine schedule** for purely preventive purposes, other than applications of pesticides designed to attract or be consumed by pests," and "the application of pesticides for purely aesthetic purposes."

This publication will be made available in accessible formats upon request. Please call 541-737-4411 for further information.

The School IPM Coordinator is responsible for overseeing pest prevention efforts, providing for the identification and evaluation of pest problems, and assuring that pesticide applications are proper and lawful (including pesticide selection, giving notice, posting warnings, and keeping records).

The Coordinator must complete at least six hours of training each year. The training must include a general review of IPM principles and the requirements of ORS 634.700 to 634.750.

The low-impact pesticides list must include pesticides that do not have the signal words "warning" or "danger" on the label, and are not classified as a human carcinogen or probable/likely to be a human carcinogen under EPA guidelines.



What Are The Concerns?

Academic Achievement

A healthier environment leads to healthier children. Healthier children have a higher academic achievement.

Asthma and Absenteeism

The number one cause of absenteeism in the United States is asthma. Most exacerbations are due to environmental triggers. Common pests in schools such as mice and cockroaches are asthma triggers.

Disease Vectors

Rodents, cockroaches, feral cats, nesting birds, and other pests can all be disease vectors. Stings from yellow jackets can cause anaphylactic shock.

Children and Pesticides

Children are NOT little adults. They are still growing and developing. They have greater metabolic demands, as well as anatomic and physiological differences that make them more susceptible to the risks associated with pesticides.

Pesticide Misuse

Monthly preventative pesticide applications and unsanctioned use of pesticides by well-meaning school employees increase the risks to people and the environment.



Where Can We Go For Help?

OSU's School IPM Program provides comprehensive assistance for schools to improve pest management while reducing costs, workload, and pesticide use (It's our mission!).

As required by ORS 634.700 - 634.750, we created a model IPM plan for use in Oregon schools. We created and provide an OSU-approved annual training for school IPM coordinators. In collaboration with the Oregon School Facilities Management Association (OSFMA), we have established a School IPM Coalition for peer sharing of successful IPM strategies, and to provide training and information at OSFMA zone meetings and at OSFMA's annual conference.

Click on the "IPM in Schools" website link at www.ipmnet.org/tim for links to the following:

- Our contact information
- Model IPM plan for use in Oregon schools
- License requirements for those who apply pesticides on school property
- Full text of ORS 634.700 - 634.750 that requires IPM in all Oregon schools
- Upcoming events such as school IPM coordinator training and coalition events



This brochure was produced with support from the U.S. Environmental Protection Agency, the Oregon Department of Agriculture, and the Oregon School Facilities Management Association.



Appendix 16 Oregon Revised Statutes 634.700 to 634.750 (IPM)

Oregon Senate Bill 637 was incorporated into Oregon Revised Statute Chapter 634 upon finalization in 2009. Below is the full text of ORS 634.700-634.750

634.700 Definitions for ORS 634.700 to 634.750. As used in ORS 634.700 to 634.750:

1. “Campus” means the buildings, other structures, playgrounds, athletic fields and parking lots of a school and any other areas on the school property that are accessed by students on a regular basis.
2. “Governing body” means a board of directors, agency or other body or person having policymaking and general oversight responsibility for a community college district, education service district, school district, other unit of education governance, private school or other educational entity.
3. “Integrated pest management plan” means a proactive strategy that:
 - a. Focuses on the long-term prevention or suppression of pest problems through economically sound measures that:
 - i. Protect the health and safety of students, staff and faculty;
 - ii. Protect the integrity of campus buildings and grounds;
 - iii. Maintain a productive learning environment; and
 - iv. Protect local ecosystem health;
 - b. Focuses on the prevention of pest problems by working to reduce or eliminate conditions of property construction, operation and maintenance that promote or allow for the establishment, feeding, breeding and proliferation of pest populations or other conditions that are conducive to pests or that create harborage for pests;
 - c. Incorporates the use of sanitation, structural remediation or habitat manipulation or of mechanical, biological and chemical pest control measures that present a reduced risk or have a low impact and, for the purpose of mitigating a declared pest emergency, the application of pesticides that are not low-impact pesticides;
 - d. Includes regular monitoring and inspections to detect pests, pest damage and unsanctioned pesticide usage;
 - e. Evaluates the need for pest control by identifying acceptable pest population density levels;
 - f. Monitors and evaluates the effectiveness of pest control measures;
 - g. Excludes the application of pesticides on a routine schedule for purely preventive purposes, other than applications of pesticides designed to attract or be consumed by pests;
 - h. Excludes the application of pesticides for purely aesthetic purposes;
 - i. Includes school staff education about sanitation, monitoring and inspection and about pest control measures;
 - j. Gives preference to the use of nonchemical pest control measures;

- k. Allows the use of low-impact pesticides if nonchemical pest control measures are ineffective; and
 - l. Allows the application of a pesticide that is not a low-impact pesticide only to mitigate a declared pest emergency or if the application is by, or at the direction or order of, a public health official.
4. “Low-impact pesticide” means a product that does not contain a pesticide product or active ingredient described in ORS 634.705 (5).
 5. “Pest” means:
 - a. An insect or other arthropod;
 - b. A weed, moss, slime or mildew or a plant disease caused by a fungus, bacterium or virus;
 - c. A nematode, snail, slug, rodent or predatory animal;
 - d. A bacterium, spore, virus, fungus or other microorganism that is harmful to human health; or
 - e. Other forms of plant or animal life that may infest or be detrimental to vegetation, humans, animals, structures, managed landscapes or other human environments.
 6. “Pest emergency” means an urgent need to eliminate or mitigate a pest situation that threatens:
 - a. The health or safety of students, staff, faculty members or members of the public using the campus; or
 - b. The structural integrity of campus facilities.
 7. “Registration number” means the pesticide registration number assigned by the United States Environmental Protection Agency.
 8. “School” means:
 - a. A facility operating an Oregon prekindergarten or a federal Head Start program;
 - b. A public or private educational institution offering education in all or part of kindergarten through grade 12;
 - c. An education service district as defined in ORS 334.003;
 - d. A community college as defined in ORS 341.005;
 - e. The Oregon School for the Deaf; and
 - f. A regional residential academy operated by the Oregon Youth Authority. [2009 c.501 §2; 2011 c.9 §82]

634.705 Adoption of integrated pest management plan and related provisions; exceptions; low-impact pesticide list.

- (1) The governing body responsible for a school shall adopt an integrated pest management plan for use on the campuses of the school. The governing body shall also adopt provisions for:
- a. Designating an integrated pest management plan coordinator;
 - b. Identifying plan coordinator responsibilities;
 - c. Giving notices under ORS 634.740;
 - d. Retaining pesticide application records under ORS 634.750;

- e. Providing a process for responding to inquiries and complaints about noncompliance with the integrated pest management plan; and
 - f. Conducting outreach to the school community about the school's integrated pest management plan.
- (2) If a governing body has control over only part of a building, a structure or property where a campus is located, the governing body may limit an integrated pest management plan to those parts of the building, structure or property over which the governing body exerts substantial control.
- (3) A governing body is not required to adopt an integrated pest management plan for off-campus buildings, structures or property, notwithstanding any incidental use for instruction.
- (4) Unless a governing body expressly provides otherwise, the application of a germicide, disinfectant, sanitizer, deodorizer, antimicrobial agent or insecticidal soap at a campus is not subject to the requirements for a pesticide application under an integrated pest management plan. However, this subsection does not permit the application at a campus of a germicide, disinfectant, sanitizer, deodorizer, antimicrobial agent or insecticidal soap that is a pesticide in a manner that is inconsistent with the goal of the integrated pest management plan.
- (5) A governing body shall adopt a list of low-impact pesticides for use with the integrated pest management plan. The governing body may include any product on the list except products that:
- a. Contain a pesticide product or active ingredient that has the signal words "warning" or "danger" on the label;
 - b. Contain a pesticide product classified as a human carcinogen or probable human carcinogen under the United States Environmental Protection Agency 1986 Guidelines for Carcinogen Risk Assessment; or
 - c. Contain a pesticide product classified as carcinogenic to humans or likely to be carcinogenic to humans under the United States Environmental Protection Agency 2003 Draft Final Guidelines for Carcinogen Risk Assessment. [2009 c.501 §3]

634.710 Plan selection. A governing body may adopt, improve or continue any integrated pest management plan that provides protection against pesticide exposure equal to or greater than the protection against pesticide exposure required by ORS 634.700 to 634.750. [2009 c.501 §9]

Note: Sections 11 and 12, chapter 501, Oregon Laws 2009, provide:

Sec. 11.

1. Notwithstanding section 9 of this 2009 Act [634.710], the Oregon State University Extension Service, in cooperation with the Department of Human Services, shall develop one or more model integrated pest management plans for use in schools subject to sections 2 to 9 of this 2009 Act [634.700 to 634.750]. The extension service shall make the model plans available to school governing bodies no later than July 1, 2011. However, a school governing body may adopt any integrated pest management plan that complies with the requirements of sections 2 to 9 of this 2009 Act.

2. Except as provided in subsection (3) of this section, a governing body required under section 3 of this 2009 Act [634.705] to adopt one or more integrated pest management plans shall implement the plans on or before July 1, 2012.
3. The deadline established in subsection (2) of this section does not apply to a school established after the effective date of this 2009 Act [January 1, 2010]. [2009 c.501 §11]

Sec. 12. Section 11 of this 2009 Act is repealed January 2, 2014. [2009 c.501 §12]

634.720 Plan coordinators.

1. The governing body shall provide for the designation of one or more persons as integrated pest management plan coordinators for the governed schools. A plan coordinator must be an employee of the governed district, unit, school or entity, unless the governing body delegates pest management duties to an independent contractor. Each school shall have the services of at least one integrated pest management plan coordinator. A plan coordinator may serve more than one school. The responsibilities of the plan coordinator shall include, but need not be limited to:
 - a. Giving notice and posting warnings under ORS 634.740;
 - b. Overseeing pest prevention efforts;
 - c. Providing for the identification and evaluation of pest situations;
 - d. Determining the means of appropriately managing pest damage that will cause the least possible hazard to people, property and the environment;
 - e. Ensuring the proper and lawful performance of pesticide applications;
 - f. Evaluating pest management results; and
 - g. Keeping records as required by ORS 634.750.
2. A plan coordinator shall complete not less than six hours of training each year. The training shall include at least a general review of integrated pest management principles and the requirements of ORS 634.700 to 634.750. [2009 c.501 §4]

634.725 Application of low-impact pesticide. If a school has followed the integrated pest management plan and nonchemical pest control measures were ineffective, subject to ORS 634.730 the integrated pest management plan coordinator may authorize the application of a low-impact pesticide. The low-impact pesticide application must be made by a pesticide applicator or by a public applicator. The use of a pesticide applicator or public applicator to make an application does not cancel, alter or reassign any of the duties imposed under ORS 634.740 or 634.750. [2009 c.501 §5]

634.730 Reentry into sprayed area; exception; declaration of pest emergency.

1. Subject to subsection (2) of this section:

- (a) If the labeling of a pesticide product specifies a reentry time, a pesticide may not be applied to an area of a campus where the school expects students to be present before expiration of that reentry time.
 - (b) If the labeling of a pesticide product does not specify a reentry time, a pesticide may not be applied to an area of a campus where the school expects students to be present before expiration of a reentry time that the integrated pest management plan coordinator determines to be appropriate based on the times at which students would normally be expected to be in the area, area ventilation and whether the area will be cleaned before students are present.
2.
 - (a) The application restrictions described in subsection (1) of this section do not apply if the pesticide is applied outdoors by a pesticide applicator or public applicator as a component of academic instruction in agriculture.
 - (b) The application restrictions described in subsection (1)(b) of this section do not apply if the integrated pest management plan coordinator declares a pest emergency under subsection (3) of this section.
3. An integrated pest management plan coordinator, after consultation with school faculty and administration, may declare the existence of a pest emergency. If necessary, a pesticide other than a low-impact pesticide may be used to mitigate a declared pest emergency. If a pesticide is applied at a campus due to a pest emergency, the plan coordinator shall review the integrated pest management plan to determine whether modification of the plan might prevent future pest emergencies. The plan coordinator shall submit any recommendations for modification of the plan to the governing body. The governing body shall review and take formal action on the recommendations. [2009 c.501 §6]

634.740 Written notice requirements; warning signs; failure to notify or warn.

1. The governing body responsible for a school shall adopt policies and processes for ensuring that the integrated pest management plan coordinator for the school, or a designee of the coordinator, gives written notice of a proposed pesticide application at the campus to, at a minimum, parents and guardians of minor students, adult students, school administrators, faculty members and staff members. The plan coordinator or designee may give a written notice described in this subsection by any reasonable means, including but not limited to, electronic mail.
2. In adopting policies and processes under subsection (1) of this section, the governing body shall consider the age of the students attending the school and consider which methods for transmitting notice are most likely to reach the intended recipients.
3. Except as provided in this subsection, the plan coordinator or designee must give a pesticide application notice in a manner reasonably calculated to reach the intended recipient at least 24 hours before the pesticide application occurs. A notice must identify the name, trademark or type of pesticide products, the registration number assigned to each of the pesticide products, the expected area of application, the expected date of application and the reason for the application. If a pest emergency makes it impracticable to give a pesticide application notice at least 24 hours before the

pesticide application occurs, the plan coordinator or designee shall send the notice no later than 24 hours after the application occurs.

4. Except as provided in this subsection, if a pesticide is applied at a campus, the plan coordinator or a designee of the coordinator shall place warning signs around pesticide application areas beginning no later than 24 hours before the application occurs and ending no earlier than 72 hours after the application occurs. A warning sign must bear the words "Warning: pesticide-treated area," give the expected or actual date and time for the application and provide the telephone number of a contact person. If a pest emergency makes it impracticable to place the warning signs at least 24 hours before the pesticide application, the plan coordinator or designee shall place the signs as soon as practicable but no later than at the time the application occurs.
5. Failure to give notice or post warnings as required by this section does not create a cause of action for damages and may not be asserted as the basis for a per se negligence claim. [2009 c.501 §7]

634.750 Pesticide application records.

1. If a pesticide is applied at a campus, the integrated pest management plan coordinator or a designee of the coordinator shall place the labeling information and material data safety sheet for the pesticide on file at a school on the campus. The plan coordinator or designee shall record and make available the following information:
 - a. The brand name or trademark of the pesticide product;
 - b. The United States Environmental Protection Agency registration number assigned to the pesticide product;
 - c. The pest condition that prompted the application;
 - d. A description of the area on campus where the application occurred;
 - e. The approximate amount and concentration of pesticide product applied;
 - f. The type of application and whether the application proved effective;
 - g. The pesticide applicator or public applicator license numbers and pesticide trainee or public trainee certificate numbers of the persons applying the pesticide;
 - h. The names of the persons applying the pesticide;
 - i. The dates on which the plan coordinator gave any notices required by ORS 634.740; and
 - j. The dates and times for the placement and removal of warning signs under ORS 634.740.
2. Pesticide application records must include copies of all notices given under ORS 634.740.
3. A school shall retain pesticide application records required by this section for at least four years following the application date. [2009 c.501 §8]

The End