



**PUBLIC WORKS
OPERATION POLICY**

Integrated Pest Management Policy

Policy No.	Program Most Impacted:
Date Approved by	Best Management Practices: 1. Reducing pesticide use 2. Client and employee safety 3. Environmental stewardship 4. Abide by local, State, and Federal requirements
Date Revised:	Forms:
Purpose of Revision:	Functional Area:
Last Training:	

PURPOSE

The purpose of this policy is to provide City of Davis employees and contractors with an overview of integrated pest management (IPM) principles and specific policy-based direction for implementing those principles. It is expected that this policy will ensure that all City operations and contracted services that manage pests or vegetation on City property do so in an environmentally sensitive manner while addressing public health, safety, economic and aesthetics requirements.

The goals of this policy are to:

- 1) Create awareness among City staff and citizens of integrated pest management techniques and environmental stewardship.
- 2) Provide a means of educating all City departments to practice the most appropriate approach to managing pests on City property.
- 3) Reduce and/or eliminate pesticides that pose known significant human or animal health, or environmental risks.

- 4) Establish a program where pesticides categorized as toxic or persistent are used only when a pest is deemed a threat to public health, safety, the environment, or to prevent economic damage (emergency or exception) and only after other alternatives have been attempted and are ineffective. If pesticides are used, provide guidelines on safe storage, handling, use, and application.
- 5) Promote the use of non-hazardous or reduced risk alternatives that are protective of human and animal health and the environment.

POLICY

The City of Davis, in carrying out its pest management operations, shall focus on long-term prevention or suppression of pest problems with minimum negative impact on human health, non-target organisms, and the environment. To this end, preference shall be given to reasonably available non-pesticide alternatives when considering the use of pesticides on City property.

When possible, City staff must employ non-chemical management tactics first. Chemicals are to be used only in accordance with the development of a site specific plan and shall be selected according to specific areas that are to be treated.

Pesticides are to be applied by, or under the supervision of, a qualified applicator that has been trained in application methods, IPM techniques, safety precautions, pest biology, proper use of personal protective equipment, appropriate storage and handling, environmental concerns, and employee rights regarding pesticide use.

The PHAER zone model will be tailored to the City of Davis parks and facilities. This model is based on the Pesticide Hazard and Exposure Reduction (PHAER) zone system (Attachment A). The objectives of the PHAER zone system are to identify concrete reduction goals (green zones), establish a measurable timeline for risk reduction activities (transition to green zones) and to communicate to the public the general level of pesticide hazard on a site-by-site basis through colored zone maps.

- Areas with high traffic and exposure to people and pets should be treated with “green” chemicals (Attachment B).
- Areas with less traffic and exposure can be treated with “green” and/or “yellow” chemicals (Attachment B).
- Red chemicals are those designated as category 1 (Danger).

In specific circumstances where there is a risk to public health or the environment, materials not on the approved materials list can temporarily be used, but only after all alternatives have been reviewed, evaluated, and/or implemented, and only after the IPM Coordinator has authorized the use of the pesticide for the specified purpose. Exemptions may be one-time or programmatic, and the decision to approve an exemption will be based upon an evaluation of the failure or success of alternatives, and taking into consideration public health, environmental, and financial risks.

Pesticide Use

Pesticides will only be used in those authorized situations where other alternative methods have proven not to be effective or feasible (e.g., cannot be sustained due to budgetary or other constraints). The following general and specific practices shall be followed:

General

- When used, those pesticides with the least toxicity to humans and the environment shall be applied. No category 1 pesticides shall be used within the City Limits except with the specific pre-authorization of the City of Davis Department Directors or designee to protect the health or safety of the public.
- Prior approval of a Supervisor, IPM Coordinator or their designee is required for all applications.
- Applications shall be performed by or under the supervision of a qualified applicator to avoid any hazard to any person or animal in the area or adjacent areas, and to avoid any property damage.
- Application(s) shall be made to time the treatment to weeds' most susceptible stage.
- Care shall be observed not to damage any other plants, especially when applying a non-selective herbicide.
- Spraying shall be confined to target species and drift should be avoided.

Specific

- No pesticides are to be applied in any designated playground areas unless conditions call for control of a hazardous or noxious pest. In this case, the area would be closed until reentry is deemed safe.
- No pesticides shall be sprayed when weather conditions are:
 - In excess of 10 mile per hour winds
 - Damp or foggy
 - Rainy
 - Extremely cold or hot

Pesticide Training

Any person applying pesticides must have pesticide safety training prior to the use of each pesticide, regardless of toxicity. Training must be updated annually. A record must be made of each employee applying pesticides, and evidence of training certified by the trainer/supervisor. Copies of the record form will be kept by the employee and the City department, and be available to local and State officials.

Training requirements

Training must be performed by a qualified person and cover the following for each pesticide handled:

- Information on the pesticide label concerning human health effects
- Hazards of the pesticide, including acute and long-term effects
- Pesticide poisoning symptoms and routes pesticides can enter the body
- Emergency first aid and how to get emergency medical care
- Routine and emergency decontamination procedures
- Need for, limitations, use, and cleaning of personal protective equipment (PPE)
- Prevention, recognition and first aid for heat-related illnesses
- Safe procedures for handling pesticides, including engineering controls
- Environmental concerns, such as drift and runoff
- Warnings against taking pesticides home
- Regulatory requirements, including Material Safety Data Sheets (MSDS) and Pesticide Safety Information Series (PSIS)
- Purpose and requirements of medical supervision, when applicable
- Location of hazard communication information
- Employee rights

Personal Protective Equipment (PPE)

The City of Davis will provide personal protective clothing and equipment to City personnel engaged in the application of pesticides on City of Davis property as stated on the manufacturer's label. Contractors are required to provide their own PPE.

Documents Required While Applying Pesticides

Any person applying a pesticide on City of Davis property must have in their possession the following documents:

- Pest control recommendation
- Pesticide label
- Pesticide MSDS
- Medical Emergency Contact Information

Reporting of Pesticide Use

At the end of each month, each Crew Supervisor will complete a Monthly Chemical Use Report form and return it to the IPM Coordinator or designee. The City of Davis must then complete and return a Monthly Summary Pesticide Use Report to the Yolo County Agricultural Commissioner's Office by the tenth of each month.

Pesticide Hotline

To inform the public on applications in areas heavily visited by the public, Public Works Department staff or contractors who apply a pesticide on City of Davis property must submit a completed Pesticide Application Information form to a Supervisor the day prior, or on the morning of the desired day of the proposed pesticide application. The information provided includes the pesticide to be applied, the area of the proposed application, and the date of the proposed application. This information is passed on to the IPM coordinator who provides the information to the public via the pesticide hotline. If the application is cancelled for any reason, the notification must be completed again, prior to each subsequent proposed application.

Posting of Application Sites

Small freestanding informational signs must be placed at each end of the area being treated. The signs must be placed no more than 300 feet apart and moved along as the material dries. This signage shall include appropriate pesticide awareness and shall not be removed from the site until pesticide spray has dried.

Storage and Disposal

All pesticide storage locations must be posted with visible warning notices legible from a distance of 25 feet from any direction in English and Spanish. Any pesticide containers holding 1

gallon or less of concentrate and/or 3 gallon backpack sprayers with diluted pesticides may be transported outside of the vehicle cab in a manner that will prevent spillage onto the vehicle or off the vehicle.

Empty pesticide containers, other than bags, must be rinsed and drained into the spraying equipment on site by the user, at the time of use, using the triple rinse method. Rinse solution should be applied to the treated areas.

All pesticide nurse containers must be labeled with the following information:

- Name of pesticide
- Category of pesticide
- EPA registration number
- Active ingredient
- Entity

Small spills of pesticides should be cleaned up immediately with absorbent material such as cat litter. For major toxic pesticide spills, contact Public Works and request Emergency Response Personnel. Note what pesticide it is, category, and if it is threatening to enter the storm drain system.

Violation Documentation

All employees of the City of Davis who have been trained to apply pesticides may be required to do so as part of their regular duties. Those who possess Qualified Applicator Certificates (QAC) from the California Department of Pesticide Regulation (DPR) are subject to discipline by the DPR via the Yolo County Agricultural Commissioner if they violate various DPR regulations such as improper safety gear, improper posting as well as other items. Those employees will also be subjected to the City of Davis Personnel Rules and Regulations as outlined below. Contractors hired by the City of Davis should follow discipline procedure according to City of Davis maintenance contract and the IPM policy. Those employees who do not possess a Qualified Applicator Certificate will be reprimanded by City of Davis if they violate DPR regulations. The disciplinary actions for violations will be those provided for in the City of Davis Personnel Rules and Regulations Article VII, sections 7.4, 7.5, & 7.6.

PROCEDURE

1. Develop site specific plan.
 - 1.1. Monitor each pest ecosystem to determine pest population, size, occurrence, and natural enemy population, if present.
 - 1.2. Identify decisions and practices that could affect pest populations as well as keeping records of such monitoring.
 - 1.3. Set a threshold level, based on how much aesthetic or economic damage the site can tolerate from pests including impacts to the operation and maintenance of public utilities, fire hazards, traffic and pedestrian safety.
 - 1.4. Develop a plan, determining appropriate level of chemical (e.g., green or yellow zone).
 - 1.5. Develop a graphical display of the plan when possible (e.g., PHAER zone maps in parks).

2. Consider the potential pest treatments and determine appropriate treatment during ongoing maintenance.
 - 2.1. In consultation with the IPM coordinator, the field supervisor shall determine the most effective treatment time, based on pest biology and other variables, such as weather and local conditions.
 - 2.2. Cultural practices, including watering, mulching, waste management, and food storage must be taken into consideration by staff prior to applying any pesticide.
 - 2.3. When possible, pest ecosystems must be modified by staff to reduce food and living space.
 - 2.4. Staff should use physical or mechanical controls such as hand-weeding, traps, and barriers when possible.
 - 2.5. Staff should use biological controls, including introducing or enhancing pests' natural enemies.
 - 2.6. Pesticide application protocol.
 - 2.6.1. Notify your crew supervisor of possible need for pest control at site.
 - 2.6.2. Request a written pest control recommendation from the City of Davis IPM Coordinator or designee (Attachment C).
 - 2.6.3. Receive the approved written pest control recommendation.
 - 2.6.4. Fill out and submit a Pesticide Application Information form after receiving an approved written pest control recommendation and before any pesticides are applied. Location and pesticides to be applied must be on the form (Attachment D).
 - 2.6.5. Send the completed Pesticide Application form via email to the IPM coordinator before the proposed pesticide application, ideally the afternoon before the scheduled day of application.

- 2.6.6. Acquire the particular pesticide which is noted on the written pest control recommendation from a supervisor or designee on the morning of the proposed pesticide application (all pesticides are stored in a locked storage facility.)
 - 2.6.7. Gather all personal protective equipment (PPE), documents, and signage required to complete the specific pesticide application and have all of these items in your possession during the application.
 - 2.6.8. Display proper City of Davis signage at all public accesses upon arriving at the site.
 - 2.6.9. Apply pesticide and do not leave site unattended until spray has dried.
 - 2.6.10. Pick up signs after the pesticide has dried.
 - 2.6.11. Document pesticide usage.
 - 2.6.12. Complete the Monthly Chemical Use Report by the last calendar day of the month and turn into the IPM Coordinator or designee before or by the 7th of the following month.
 - 2.6.13. City of Davis IPM Coordinator or designee must complete and submit the Monthly Summary Pesticide Use Report to the County Agricultural Commissioner's Office within the first 10 days of the following month.
 - 2.6.14. All City of Davis contractors shall follow the pesticide application procedure defined in the Contractor Maintenance Contract.
3. The IPM Coordinator shall present an annual report on the City's IPM program to the Natural Resources Commission (NRC), and may present to the Recreation and Parks Commission, Open Space and Habitat Commissions, or other Commissions if requested.
 4. Conduct ongoing training programs.
 - 4.1. The IPM coordinator and/or department supervisors trained in pest control shall train staff in pest biology, the IPM approach, new pest management strategies as they become known, and toxicology of pesticides proposed for use.
 5. Conduct ongoing public outreach and education.
 - 5.1. The IPM coordinator shall inform the public of the City's policy to reduce pesticide use and respond to questions from the public about the City's pest management practices
 6. When planning new projects or renovating existing areas, the design must be reviewed by the IPM coordinator and staff overseeing both the initial design and future maintenance to assure that pest habitats are eliminated or reduced. This process will result in a more sustainable design.

SCOPE AND CONDITIONS

This policy and procedure applies to all City of Davis departments, staff and hired contractors that use pesticides in any way. All contractors involved in pest management are to comply with the procedures listed above through coordination with the City staff person coordinating or supervising the contract.

RESPONSIBILITY

Department Heads, Managers and Supervisors

- 1) Department Heads and Managers shall ensure that departmental procedures, budget, and staffing decisions support implementation of the IPM Policy.
- 2) Supervisors working with the IPM coordinator shall provide training for field management staff in the requirements of this IPM Policy.
- 3) Appropriate personnel will report as required to various commissions and the City Council regarding the department's implementation of the IPM Policy.

Integrated Pest Management Coordinator

The IPM Coordinator shall be responsible for:

- 1) Coordinating efforts to adopt IPM techniques for the City of Davis.
- 2) Communication with all staff on the goals and guidelines of the program.
- 3) Providing training to Parks and General Services, Public Works and other City staff in the requirements of this IPM Policy as well as preparing individuals who handle pesticides in obtaining a QAC.
- 4) Facilitating meetings with the City's commissions and City Council.
- 5) Tracking all pesticide use and ensuring that the information is available to the public.
- 6) Presenting an annual report to evaluate the progress of the IPM program.
- 7) Coordinating with other public agencies that are practicing IPM programs.
- 8) Filing monthly pesticide use reports with the County and renew the annual pesticide permit.
- 9) Serving as public information officer in coordination with the Environmental Compliance Coordinator on IPM and pesticide related issues.
- 10) Keep current on all Federal (EPA), State (DPR) and local regulations and provide updates to department personnel.

GLOSSARY

Biological control – This method uses biological technologies to manage unwanted pests. Examples of this type of control include, but would not be limited to the use of pheromone traps for management of Indian meal moth in food storage/preparation areas, or beneficial insect release for control of certain types of weeds or invasive insects in landscapes.

Contract- A binding written agreement between two parties. Contracts entered into the pesticide realm are generally for goods or services

Contractor- A person, firm, corporation, or other entity, including a governmental entity, that enters into a contract with the City of Davis.

Cultural control - Is the practice of modifying the growing environment to reduce the prevalence of unwanted pests. Examples include irrigation practices, improved and reduced fertilization applications, proper mowing practices that include mulching, and regular aeration to improve the soil.

DPR - Department of Pesticide Regulations for the State of California's Environmental Protection Agency. DPR, in partnership with Federal EPA and County Department of Agriculture, oversees all issues regarding the registration, licensing and enforcement of laws and regulations pertaining to pesticides.

Emergency- A pest outbreak that poses an immediate threat to public health or significant economic or environmental damage.

Environmental Stewardship - The strategic approach to pest management in which the IPM practitioners find balance in preserving the natural integrity and health of the environment, promoting public safety and maintaining functional utilities while recommending or applying pest management methods. Environmental Stewardship philosophy helps to create awareness of Best Management Practices and their relationship to maintaining a healthy environment while conducting pest management activities.

EPA- The United States Environmental Protection Agency

Exemption- A process by which materials not on the approved materials list, can temporarily be used, but only after all alternatives have been reviewed, evaluated, and or implemented and only after the IPM Coordinator has authorized the use of the pesticide for the specified purpose. Exemptions may be one-time or programmatic and the decision to approve an exemption will be based upon an evaluation of the failure or success of alternatives, and taking into consideration public health, environmental, and financial risks.

IPM Coordinator- An individual whose primary function is to administer the IPM program for the City of Davis. The IPM coordinator shall be trained in the principles of low risk IPM, safe application of pesticides, and alternatives to pesticide use. The IPM coordinator shall possess a PCA license by the state of California.

Integrated Pest Management (IPM)- A decision-making process for managing pests that uses monitoring to determine pest levels and tolerance thresholds and combines biological, cultural, physical, and chemical tools to minimize health, environmental, and financial risks. The method uses extensive knowledge about pests, such as infestation thresholds, life histories, environmental requirements, and natural enemies to compliment and facilitate biological and other natural control of pests.

Landscapes- Grounds that are actively managed such as parks, plantings, lawns around public buildings, right-of-ways, watersheds, and open space, etc., excluding large tracts of forestland.

Mechanical controls – The use of IPM control methods utilizing hand labor or equipment such as mowers, graders, weed-eaters, and chainsaws. Crack and crevice sealants and closing small entryways (e.g., around pipes and conduits) into buildings for insect and rodent management would also be mechanical methods.

PCA – PCA or Pest Control Advisor is one licensed by the California Department of Pesticide Regulations according to Title 3, Article 5 of the California Code of Regulations. Only a licensed PCA, who is registered with the County Agricultural Commissioner may provide written pest control recommendations for agricultural pest management, including parks, cemeteries, golf courses, and rights-of-way.

Pesticide- Any substance, or mixture of substances, used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may be detrimental to vegetation, humans, animals or structures.

QAC - Qualified Applicators Certificate is a certified applicator of pesticides according to Title 3, Article 3 of the California Code of Regulations. Applications may include residential, industrial, institutional, landscape, and rights-of-way sites.

Sustainable Design, Construction, and Maintenance- Principles, materials, and techniques that conserve natural resources and improve environmental quality throughout the lifecycle of the landscape and its surrounding environment. Sustainable designs for buildings and landscapes incorporate methods that reduce the potential for pest problems from the start and with long-term maintenance needs in mind.

Attachments:

- A. PHAER zone descriptions
- B. Chemical List
- C. IPM Recommendation Request Form
- D. Daily Pesticide Application Form

Chemical List

Green Materials List

Herbicide	GreenMatch O	limonene/citrus oil
Herbicide	Greenmatch EX	lemongrass oil
Herbicide	Matran 2	clove oil
Herbicide	Weed Zap	45% clove and 45% cinnamon oil
Herbicide	Blackberry& Brush Block	20% Citric Acid
Herbicide	All Down	Citric acid
Herbicide	Bioganic	Acetic Acid, clove & thyme oil
Herbicide	Bradfield	Acetic Acid 20%
Herbicide	Burn Out	Acetic Acid
Herbicide	EcoExempt	Eugenol (Clove)
Herbicide	Safer Weedkiller	Soap
Herbicide	Scythe	57% pelargonic acid
Herbicide	Worry Free Weed K	Citric Acid
Insecticide	EcoExempt IC	Herb and Mineral oils
Insecticide	Victors Poison Free Wasp	Mint oil
Insecticide	Dipel, Javallin	Bacillus thuringiensis (Bt.)
Insecticide	Cinnamite	Cinnamaldehyde
Insecticide	Roach Terminal	Oxypurinol, xanthine
Insecticide	Avert	Abemectine
Insecticide	Liquid Ant Bait	Disodium Octaborate Tetrahydrate
Insecticide	Safer Insecticidal Soap	Soap
	M-Pede	Soap
Molluscicide	Sluggo	Iron Phosphate
Fungicide/ Insecticide	Stylet oil	petroleum oil

Yellow Materials List

Herbicide	Roundup	Glyphosate
Herbicide	AquaMaster	Glyphosate
Herbicide	Telar	Chlorsulfuron
Herbicide	Garlon	Triclopyr
Herbicide	Goaltender	Oxyfluorfen
Herbicide	Transline	Clopyralid
Herbicide	Direx	Diuron
Herbicide	Snapshot	Trifluralin
Herbicide	Milestone	Aminopyralid
Herbicide	Turflon	Triclopyr
Herbicide	Fusilade II	Fluazifob-P-butyl
Herbicide	Sedgehammer	Halosulfuron
Herbicide	Barricade	Prodiamine
Herbicide	Payload	Flumioxazin
Herbicide	Landmark	Sulfometuron
Insecticide	Zenith	Imidacloprid
Adjuvant	Cayuse Plus	Ammonium sulfate, alcohol ethoxylated phosphate ester
Adjuvant	R-11	Alkylphenol ethoxylate, butyl alcohol, dimethylpolysiloxane

Red Material List

Herbicide	Weedar 64	2-4D amine
Herbicide	Clarity	Dicamba
Fumigant	Sanafoam Rootavator	Metan Sodium