



Integrated Pest Management (IPM) Program

Parks, Recreation, Library and Golf

City of Englewood, Colorado

I. Mission Statement:

Englewood Parks and Golf Divisions mission is to manage pests that are harmful to the health, function, aesthetic value of Englewood landscapes in an efficient, effective and environmentally responsible manner. Our Integrated Pest Management strategy seeks to help prevent unacceptable levels of pest damage on Englewood landscapes through the proper assessment of risks to people, property, other living organisms and the environment, while balancing costs, benefits and public health in maintaining our parks and open space.

II. IPM Definition:

Integrated Pest Management (IPM) is a sustainable, science-based, decision-making process that combines biological, cultural, physical and chemical tools to identify, manage and reduce risk from pests and pest management tools and strategies in a way that minimizes overall economic, health and environmental risks.

III. Pest Definition:

Pests are defined as any noxious weed, problem insect, plant disease, animal, nematode or microorganism which is detrimental to our parks and open space.

IV. Integrated Weed Management:

According to the Colorado Noxious Weed Act, Integrated Weed Management (IWM) is "the planning and implementation of a coordinated program utilizing a variety of methods for managing noxious weeds, the purpose of which is to achieve desirable plant communities" (Colorado Noxious Weed Act, 35-5.5). Methods used in integrated weed management include, but are not limited to, preventative measures, education, monitoring, mechanical control, cultural control, biological control, and chemical control. The process of integrated weed management considers each method's potential hazard to people, the environment, and property while also taking into consideration limitations of budget and human resources.

V. Pest Management Statement:

Should prevention measures of alternative pest control methods become unavoidable, we would endeavor to first use all mechanical and hand-labor resources available at our disposal to manage a pest outbreak. Consideration of all cultural and Best Management Practices (BMP) controls would be our next steps. If the pest outbreak presents no immediate property or economic risk to our public land assets, we will continuously monitor the pest to insure no damage is occurring. If afforded the time to implement cultural controls and/or BMP's to reduce or eliminate the pest problem, we aspire to professionally and proactively use all means available to us. We aspire to actively introduce biological agents (as defined in section VII, sec D) that help support good ecological health and supplement the control of destructive pests.

VI. Weed Management Strategies:

The City of Englewood Parks and Golf Divisions use a combination of methods for noxious weed control to increase the effectiveness and efficiency of control. This is accomplished by continually depleting nutrient reserves and reducing the ability of the weed to reproduce. Being able to use a variety of methods also allows for the flexibility required to control different species of weed infestations in varying locations under varying and unpredictable environmental conditions. The following list of control methods is not exhaustive. Alternative methods that are not listed below will be evaluated for effectiveness by Park staff. Also, some methods may be considered in multiple categories.

Questions we ask before pest management decisions are made:

- What pests are present, in what numbers and stages of development?
- What conditions exist that may increase or decrease pest problems?
- What natural enemies of the pests, such as parasites, predators, or diseases, are present that may play an important role in control?
- What amount and type of damage is being caused or may soon be caused by pests?
- What is the stage of development, condition, and value of the crop?
- What is the potential for economical injury? How much damage is tolerable? Has the action threshold been reached?
- What pest management options are available, and how do the advantages and disadvantages of each apply to the situation?
- If alternatives are not available, is a pesticide treatment justified for the situation? If so, what is the material of choice?
- If a pesticide is not justified, what approaches, if any, should be taken?

VII. Control methods used for IPM:

- A. Cultural methods:** Suppressing pest problems by minimizing the conditions they need to live (water, shelter or food). Planting plants that are adapted to your growing conditions, planting them in the right place, giving proper attention to their water and nutritional needs. Strong plants resist diseases, outgrow weeds and are less likely to succumb to insects.
- B. Physical methods:** Prevent pest access to the host or area, or, if the pests are already present, physically removing them by some means. For example, this could mean using barriers, traps, vacuuming, mowing or steam applications.
- C. Genetic methods:** Use pest-resistant plant varieties developed by classical plant breeding. There are also special uses of genetic techniques on pests themselves, such as a "sterile male" insect releases.
- D. Biological methods:** Use predators, parasites and diseases of pests in a targeted way to suppress pest populations. Use of microbial diseases of pests have become part of the chemical pesticide registration process and is treated below under Chemical methods. Use of predators and parasites as biocontrol for pests are handled in one or more of 3 ways;
- Conservation and encouragement of naturally occurring biocontrol organisms by cultural techniques or at least avoidance of harming them
 - Augmentation of naturally occurring species by purchasing and releasing more of the same
 - "Classical" biological control in which new biocontrol species specific to pests are sought and introduced
- E. Chemical methods:** There are many "chemicals" that are used in pest management situations, but not all chemicals are alike from the standpoint of their range of action, toxicity, or persistence in the environment. Chemical methods should be considered as a last measure behind all other methods.
- F. Conventional:** Conventional pesticides currently refers to synthetically produced compounds that act as direct toxins. There are many new classes of chemicals being added to the older conventional pesticides
- G. Regulatory:** Regulatory control refers to the role played by government agencies in trying to stop the entry or spread of pests into an area or into the country via inspection, quarantine, destruction of infested material, and other methods.

VII. Prevention:

The most effective way to control noxious weeds is to prevent their initial establishment. Once noxious weeds become established, their control is costly and time consuming. Prioritizing of parks for control measures will be considered. Different park areas may have varying standards and acceptable care and appearance. Careful awareness to the public's desires and needs must be part of the prioritization process.

IX. Education:

Noxious weed education is an important step in Integrated Weed Management (IWM) for both the City staff and the public. Weed management is a complex and evolving field of study that requires staff to continually increase their knowledge and understanding so that weed control methods can be used in the most effective means possible. Also, it is important to educate the public about noxious weeds so that they understand the necessity of their control and will support the City's efforts. Furthermore, a more educated public will be able to more effectively control noxious weeds on their own property.

A. Methods to Educate Staff:

- All applicators are licensed by the Colorado Department of Agriculture as a public pesticide applicator.
- For licensed public pesticide applicators, obtain continuing education credits as required by the Colorado Department of Agriculture.
- Attend noxious weed workshops, insect and disease presentations, and conferences.
- Network and communicate with other Colorado weed managers.

B. Methods to Educate the Public:

- Signage in the Parks explaining what and when herbicides were used
- Social media posts
- Host volunteer weed pulling events
- Submitting articles to the local newsletter and newspapers
- Provide information through the City's website.

X. Monitoring:

Englewood Parks and Golf Divisions feel monitoring is a critical tool in integrated weed management as it helps to detect initial weed infestations before they get out of control and also helps to determine if the current methods of control are effective. A goal of Parks, Recreation, Library and Golf is to hand-map weeds and make general observations which will be recorded throughout the season as weed control takes place. All herbicide treatments will be recorded as required through the Colorado Pesticide Applicators' Act.

XI. Pesticide Safety:

The City of Englewood Parks and Golf Divisions have an impeccable safety record with respect to the use of both organic and synthetic pesticides, both internally and with the State Department of Agriculture. This is made possible in part by our endeavor to limit the use of pesticides, but also our resolve to appropriately train our employees and carefully assess every pesticide application through label directives and safety procedures during use. The following provides some of the main actions we take to promote safety with our employees and the public.

- Careful product selection – staff evaluates potential products for the least toxicological characteristics to effectively control the targeted pest.
- Assessment of Environmental Conditions – Proper evaluation of weather conditions to avoid chemical trespass and to assess the presence of land patrons, pollinators and other living beneficial organisms.
- Notification of the public – Application information is posted at all public entry points. Those registered with the State on the Pesticide Sensitivity Registry are contacted prior to the application.
- Record keeping- Tracking pests, damage, date and time control used, product used, applicator, weather conditions, environmental hazards
- Personal Protection Equipment – All pesticide applicators will be provided the appropriate personal protective equipment to perform pesticide applications in a safe and responsible manner.