



Integrated Pest Management Plan

INTRODUCTION

Pests are populations of living organisms (animals, plants, or microorganism) located where they are not wanted and/or that may cause health, economic, or ecological damage.

The use of pesticides in urban, suburban, and agricultural settings has grown over the past several decades. Many public agencies have incorporated routine pesticide use into their buildings and grounds maintenance programs. In recent years, human health and environmental concerns have produced a heightened sensitivity to pesticide use. Such concern has created an awareness of the need for alternatives to dependence on pesticides as a sole solution to pest control. The primary alternative approach is integrated pest management. Many institutions are adopting formal integrated pest management plans in their management practices.

Integrated pest management is an approach that establishes a sustainable management practice for controlling pests by combining cultural, mechanical, biological, and chemical tools in a way that minimizes health, economic, and environmental risks. It is a pest population management system that utilizes site monitoring, predetermined thresholds, and all suitable techniques of pest control to reduce or manipulate pest populations while providing protection against hazards to humans, domestic animals and the environment. It is a process rather than any specific actions. It is thoughtful and proactive rather than reactive. Integrated pest management seeks to understand the causes of pest problems, implements long-term solutions, and employs a means of prevention rather than mere treatment of symptoms.

This plan applies to buildings and grounds owned and maintained by the Town of Hillsborough. The plan outlines procedures to be followed to protect the health and safety of staff and the public from pests and pesticide hazards.

Objectives of the plan include:

- Elimination of significant threats caused by pests to the health and safety of staff and the public.
- Prevention of loss or damage to structures or property by pests.
- Protection of environmental quality inside and outside buildings.

The Integrated Pest Management Plan utilizes information and language from the North Carolina Extension Gardener handbook by NC State Extension publications.

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BACKGROUND

When modern pesticides were developed, they were used extensively. Pests susceptible to a pesticide were quickly killed, leaving resistant ones to breed and multiply. It became clear that pesticides would not solve all pest problems. Instead, overuse of pesticides caused the development of resistant pests. Scientists began to develop a new approach to pest control described as integrated pest management. “Integrated” refers to considering and appropriately using all control measures: mechanical, cultural, biological, and chemical. An integrated pest management plan allows some level of pests in the environment. Pests are much less likely to survive a program that uses many methods to reduce their populations.

Integrated pest management was suggested by entomologists because insects were the first pests to prove difficult to manage with chemicals alone. Early proponents suggested five basic strategies to improve insect management:

- Step 1. Monitor and scout insects to determine insect types and population levels.
- Step 2. Identify pest and host accurately.
- Step 3. Assess and consider thresholds. A threshold is the point at which action should be taken.
- Step 4. Implement a treatment strategy using cultural, mechanical, biological, or chemical controls or a combination of these strategies.
- Step 5. Evaluate success of treatments.

Integrated pest management has extended beyond insects to managing all pest populations: weeds, disease organisms, and mammals. The goal is management rather than eradication.

The most important tools in pest management are:

- 1. Prevention — Being present and observant ensures early detection. Prevention is the least expensive and the most effective and environmentally friendly solution.
- 2. Early Intervention — Reacting to problems quickly, before they can multiply, requires a less dramatic intervention.
- 3. Recordkeeping — Tracking what happens allows for pattern recognition and informed decision-making.

Integrated pest management combines background information about a pest problem with a strategy that fits the situation. It will help decide:

- 1. Which pests are present and if they are in high enough concentrations to cause problems.
- 2. Which control measures should be taken to manage a problem.
- 3. How to evaluate the success of the control measures.

STRATEGIES

Pest management strategies include education; sanitation; maintenance; cultural, mechanical, and biological controls; and pre-approved, site-appropriate pesticide application.

A variety of control measures are used to regulate pests:

1. Cultural Management — Cultural methods are cost-effective, pose little risk to the environment, and can be very effective. They work by changing conditions to interfere with the pest and its life cycle. Cultural methods of suppressing pest problems include ensuring that site conditions are not attractive to pests.
2. Mechanical Management — Mechanical management practices include handpicking, traps, barriers, pruning and raking, water sprays and irrigation, heat treatments, and frightening devices. Mechanical methods require time and can be more practical for small sites.
3. Biological Management — Biological management is the process of reducing a pest population by using predators, parasites, or disease organisms that ordinarily occur in nature. Plant-feeding insects are best kept from overwhelming the rest of the world by serving as food for other insects. Biological management can be an effective means of killing harmful pests.
4. Chemical Management — Chemical options may be considered as a last resort if a pest has been correctly identified and is still a problem after other management strategies have been implemented. Herbicides are available to kill weeds, insecticides to kill insects, and fungicides and antibiotics to manage diseases. The selected chemical must be labeled both for management of the offending pest and for use on the specific type of plant to be sprayed. All users are legally required to follow the instructions on the pesticide label, including the amount and timing of application.

Misuse of pesticides can kill all insects vulnerable to the active ingredients, leaving only the strongest to mate and reproduce. This can result in pests quickly building resistance to the misused chemicals. In addition, pesticides can kill beneficial insects, making a pest problem much worse because pest populations generally recover more quickly. Pesticide applications also can:

- Lead to outbreaks of secondary pests.
- Adversely affect nontarget organisms that eat insects or leaves contaminated with pesticide.
- Be carried into streams by stormwater runoff and cause unintended consequences.
- Cause hazards to the user and indirect hazards through secondary exposures.

IMPLEMENTATION

Steps in Decision-making

An integrated pest management decision at the Town of Hillsborough shall consist of the following:

1. Identify pest species.
2. Estimate pest populations and compare to established action thresholds.
3. Select the appropriate management tactics based on current information.
4. Assess effectiveness of pest management.
5. Keep appropriate records.

Decisions concerning whether pesticides should be applied will be based on a review of available options in each situation. Efforts will be made to avoid the use of pesticides through adequate pest proofing of facilities, good sanitation practices, selection of pest-resistant plant materials, and appropriate horticultural practices.

When a pesticide must be used to meet pest management objectives, the least-hazardous material adequate for the job will be chosen.

All pesticide storage, transportation, and application will be conducted in accordance with the requirement of the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code 136 et seq.), Environmental Protection Agency regulations in Title 40 of the Code of Federal Regulations, Town of Hillsborough policies and procedures, and local ordinances.

Routine management procedures for common pests will use prevention and the least toxic control methods. Examples of these methods include:

- For Buildings — caulking, crack and crevice applications of boric acid baits, improved sanitation.
- For Landscaping — selection of pest resistant plant species and monitoring of soil health. These are important prevention methods:
 - Using cultural controls such as mowing turf at the proper height
 - Mulching root zones to inhibit competition by weeds and to help maintain soil moisture.
 - Scheduling proper irrigation applications.
 - Maintaining good sanitation practices around plants.

Circumstances may arise in which cultural, mechanical, and biological practices for integrated pest management may not be practical. If a situation dictates the use of chemical pesticides, the integrated pest management coordinator or designee will select the least toxic and most effective and practical method to control the target pest.

Outside contractors will supply the coordinator with a list of control recommendations including chemicals, baits or traps. The contractor shall use the least toxic and most effective and practical method for pest control.

Notification of Pesticide Applications

Notification of any necessary pesticide use shall be posted on site in advance of pesticide applications.

Exemptions

Certain relatively low-risk pesticides are exempted from these notification requirements, including antimicrobial cleansers, disinfectants, self-contained baits and crack-and-crevice treatments, and any pesticide products classified as Toxicity Class IV — relatively nontoxic — by the U.S. Environmental Protection Agency. This class requires no signal word on the product's label.

Use of occasional wasp or hornet sprays by staff or service providers who may otherwise be at risk of insect stings is exempt. Reports of such use must be made to the integrated pest management coordinators and advance notice must be given, if time permits, to people who may be affected.

Emergency Use

In the rare event that a non-exempt pesticide must be used for a pest control emergency and advance notification cannot be posted due to insufficient time, notification will be posted as soon as possible after the pesticide application.

Roles

Coordinators

Two Public Space and Sustainability Division positions will oversee the town's integrated pest management plan and program:

- Facilities Coordinator — Serves as integrated pest management coordinator for all town-owned and maintained facilities.
- Public Space and Sustainability Manager — Serves as integrated pest management coordinator for town-owned and maintained outdoor sites, such as parks, greenways, forests, and cemeteries.

Integrated pest management strategies for addressing invasive plants on town-owned and maintained properties will be coordinated with the Hillsborough Tree Board.

Applicators

All employees and service providers involved in pesticide applications must be appropriately certified for the tasks they are conducting. No person may apply, store, or dispose of any pesticide on Town of Hillsborough-managed property without an appropriate pesticide applicator license. Any pesticide application determined to be needed must be applied at the Town of Hillsborough integrated pest management coordinator's direction. All applicators must comply with this policy and must follow appropriate regulations and label precautions when using pesticides in or around Town of Hillsborough facilities.

Pest control service providers who work for the town are required to understand and abide by this policy. Such pest control service providers must provide the town's integrated pest management coordinator with a copy of the relevant pesticide license from the North Carolina Department of Agriculture and Consumer Services, a description of the chemical and nonchemical methods proposed to be used, and a final report or invoice detailing the work conducted.

Service Providers

Town of Hillsborough service providers — including cleaning, pest control and grounds maintenance contractors — will be guided and informed by the specifications of this policy.

Service providers will be directed to provide special attention to pest-vulnerable areas, including food storage, preparation and serving areas; washrooms; custodial closets; mechanical rooms; and building entryways.

Service providers or other integrated pest management experts will be asked to provide input on any Town of Hillsborough facility renovation or reconstruction projects, including reviewing plans for pest-conducive conditions, suggesting pest-proofing measures and inspecting construction where applicable to prevent and avoid pest problems.

Town Employees

Successful implementation of integrated pest management requires that all town employees work together to identify, control and eliminate pests on town-owned and maintained properties within their scope of work. For most, this will be an awareness of potential problems, means of prevention, and whom to notify of pest problems around their personal workspaces. Often, employees benefit directly from adhering to proper food storage and housekeeping habits to protect their work environment.

Town Administration

Town of Hillsborough administration will provide support to assist the integrated pest management coordinators in maintaining a program that relies on minimal pesticide use. Such support will include efforts to promptly address any structural, horticultural, or sanitation changes recommended by the coordinators to reduce or prevent pest problems.

Town of Hillsborough administration also will assist the coordinators in developing and delivering materials and programs for staff and the public to educate them about the importance of good sanitation and best pest management strategies.

Training

Town staff will consult with the integrated pest management coordinators concerning training, control procedures, prevention and implementation of this plan. Town staff will be offered the appropriate level of training to acquaint them with basic pest identification and best practice control methods.

Additional Resources

The integrated pest management coordinators will develop additional guidance based on established best practices and research pertaining to management of specific species. Guidance will be sought from Invasive Plant Council, North Carolina Wildlife Resources Commission, North Carolina Cooperative Extension, and Xerces Society. Other agencies with established expertise may also be consulted.

Recordkeeping

The Integrated pest management coordinators will maintain records of pest problems, prevention and control activities. Successful pest-specific strategies will be collected and made available to staff and service providers.

Plan Updates

Integrated pest management continually evolves. This policy should reflect changes and be subject to review every five years.