**BOROUGH OF CHATHAM INTEGRATED PEST MANAGEMENT IMPLEMENTATION PLAN AND PROCEDURE**

Integrated Pest Management (IPM) is a method of managing insects, undesired plants and plant diseases, and rodent pests with the tools that are less likely to impact human health or the environment. IPM is a process. It is thoughtful, preventive, and proactive rather than reactive. The goal of IPM is to develop a systematic approach to prevent pest infestations and to manage pests successfully while minimizing impacts on people and on the environment.

IPM seeks to understand the causes of pest problems, to prevent pest problems, and to implement long-term solutions, rather than just treating the symptoms (pests). IPM involves inspecting and monitoring, to identify infested zones and to set thresholds at which action must be taken. Once a threshold level is reached, the least toxic method that is effective and practical is used.

The legal definition for Integrated Pest Management from NJ state regulations, at N.J.A.C. 7:30-1 is: " "Integrated Pest Management" " or ""IPM"" means a sustainable approach to managing pests by using all appropriate technology and management practices in a way that minimizes health, environmental and economic risks. IPM includes, but is not limited to, monitoring pest populations, consumer education, and, when needed, cultivation practices, sanitation, solid waste management, structural maintenance, physical, mechanical, biological and chemical controls."

In accordance with Integrated Pest Management practices, Chatham Borough will seek to minimize pesticide use, and to use lower-risk pesticides when pesticides are needed. Pesticides will not be applied unnecessarily, nor as a matter of routine. Pesticides will be used only after all non-chemical means of pest control have been considered and exhausted.

Integrated Pest Management is the policy of Chatham Borough. A resolution will be adopted by the Mayor and Council of Chatham Borough establishing Integrated Pest Management as the pest control policy and strategy to be employed in the maintenance of all of the Borough's public properties and facilities.

The Director of Public Works is the IPM Coordinator for Chatham Borough. If a contractor is used, the contractor should be required to follow this Integrated Pest Management Plan. The Director of Public Works will oversee monitoring and schedule inspections, select the pest management tool to be used for any particular problem, and maintain adequate supplies to integrate the appropriate management option into the Borough of Chatham maintenance plan for each Borough property.

If pesticide use is needed, Chatham Borough will use a low-impact pesticide, whenever practical and effective. Chatham Borough will use the least risky pesticide that is practical and effective to control the problem when pesticides are needed. This requirement is not intended to reduce flexibility but to foster a decision making process that may reduce risk by considering the least hazardous yet effective pest control solution.

This Integrated Pest Management Plan and Procedure will be implemented immediately on all municipally-owned properties in Chatham Borough.

## I. NON-CHEMICAL MEANS FIRST

Chatham Borough will continue to undertake a variety of non-chemical pest management strategies. Chatham Borough will adhere to a frequent and timely mowing and grounds maintenance schedule. Grass will continue to be cut high, to enhance it competition with the weeds, and mowing patterns will continue to be varied, to help reduce soil compaction. Good drainage will be maintained. Tree branches and shrubbery will continue to be well-maintained and kept away from buildings. Borough grounds and facilities will be kept free of trash, litter, and unnecessary debris. Roofs will continue to be repaired in a timely manner so as not to attract pests to deteriorating wood. Diversified pest-resistant

and disease-resistant native plant species will be used wherever possible, to ensure the least need for fertilizers and pesticides. Manual and mechanical controls, such as pulling weeds by hand or mowing, will be the first choice for management of invasive plant species when and where feasible. Physical controls will continue to be used, e.g., repairing leaks, caulking cracks, etc. Additional mechanical controls may include use of rodent traps and tilling soil prior to planting to disrupt pest life cycles. Biological controls, such as the use of the pests' natural predators – ladybugs, beneficial insects, etc. – will be used when practical and effective.

## II. MONITORING

To minimize pesticide use, regular monitoring and inspections will be scheduled to assure that pests or invasive plant species do not gain so much territory that rapid, intensive pesticide treatment would be necessary to regain control.

The Director of Public Works will undertake regular inspections for indoor and outdoor pests at municipal buildings and facilities. Areas will be given priority that currently have pests or show signs of pest activity, or that have historically had pests. It will be important to accurately identify the pest(s) involved in order to select appropriate strategies and timing to control the problem. If the Director of Public Works is unable to identify the pest(s), he/she can consult the Morris County Office of Rutgers Cooperative Extension (973-285-8300, P.O. Box 900 Morristown, NJ 07960, www.njaes.rutgers.edu) for assistance.

When, through monitoring, the Director of Public Works determines that a threshold has been reached, the Director of Public Works determines what action is necessary, starting with non-chemical management tools, then turning to low-impact pesticides, and to EPA-regulated pesticides only as a last resort . After an action is taken, the Director of Public Works will evaluate the success of the action and follow-up as needed.

## III. PESTICIDES

Pesticides include any substance sold to kill or control pests. They include insecticides, used to kill insects, herbicides, used against weeds, fungicides, used against plant diseases, and, rodenticides, which kill rats and mice. Low-impact pesticides do not require regulation by the US Environmental Protection Agency (EPA).

### IIIA. LOW-IMPACT PESTICIDES

When the Director of Public Works determines that pesticide use is required, they or their contractor will use a low-impact pesticide whenever practical and effective.

N.J.A.C. 7:30-13 defines the following low-impact pesticides:

- Any formulation using gel, paste, or bait. Examples would include ant traps and insecticide gels;
- Antimicrobial agents, used to kill fungus and bacteria, such as a disinfectant used as a cleaning product; mold and mildew removers also qualify. Further definitions of antimicrobial agents can be found in N.J.A.C. 7:30-1.2 or at www.state.nj.us/dep/enforcement/pcp/ipm-lowimpact.htm.
- Pesticides with the following active ingredients: boric acid; disodium octoborate tetrahydrate; silica gels; or diatomaceous earth (soft sedimentary rock, easily crumbled into white, abrasive powder with insecticide uses)
- Microbe-based insecticides, such as bacillus thuringiensis (Bt) Each Bt strain produces different proteins that kill specific insect larvae
- Botanical insecticides, without toxic synergists. Examples: Pyrethrins – taken from the chrysanthemum flower – natural, biodegradable; neem oil, extracted from kernels of the neem plant
- Biological, living control agents (natural predators – e.g., ladybugs, beneficial insects, praying mantids, predatory mites, toads, etc. )

The following pesticides are also exempt from EPA regulation under FIFRA, the Federal Insecticide, Fungicide and Rodenticide Act: Pheromones or pheromone traps, which are substances produced by insects that lure and trap insects of the same species; food used to attract pests; cedar wood blocks, shavings, etc. used to repel pests.

The above pesticides are generally examples of biopesticides, which come from natural materials, e.g., plants, bacteria, and minerals.

Low-impact pesticides also include "minimum risk" pesticides that EPA has decided do not require regulation (under section 25(b) of FIFRA), generally because they represent minimal risk. The complete list is included at Code of Federal Regulations 40 CFR 152.25. Theses pesticides have the following characteristics:

1, They must contain active ingredient(s) – the substance(s) that kill, destroy, mitigate, or repel pests – from the following list: castor oil; cedar oil; cinnamon and cinnamon oil; citric acid; citronella and citronella oil; cloves and clove oil; corn gluten meal; corn oil; cottonseed oil; eugenol; garlic and garlic oil; geraniol; geranium oil; lauryl sulfate; lemongrass oil; linseed oil; malic acid; mint and mint oil; peppermint and peppermint oil; 2-phenetyl propionate; potassium sorbate; putrescent whole egg solids; rosemary and rosemary oil; sesame, including ground sesame plant, and sesame oil; sodium chlorate (common salt); sodium lauryl sulfate; soybean oil; thyme and thyme oil; white pepper; zinc metal strips (consisting solely of zinc metal and impurities).

2. The Inactive (inert) ingredients for these non-regulated pesticides must be included on the list found at www.epa.gov/opprd001/inerts/section25b_inerts.pdf. This list is also attached to this IPM plan.

3. All active inactive ingredients must be listed on the label by name and weight percentage.

4. The label must not include any false or misleading statements

5. They cannot make any public health claims, e.g., they cannot claim to control pests in a way that links the pests with any specific disease.

No notification is required for the use of low-impact pesticides.

All pesticides, even low-impact pesticides, carry at least some level of risk. If pesticides are needed,Chatham Borough will use them properly to minimize potential risk from their use, considering , in addition to the product to be used, the purpose, timing, methods, potential impact on organisms other than the target organism(s), and site of pesticide application. Spot-treatment, rather than treating a large area, is preferable whenever practical and effective.

**III B. OTHER PESTICIDES**

When plant, fungal or insect pests become otherwise unmanageable by the various non-chemical and low-impact pest management methods, other pesticides may be used as a control method of last resort. Chemical pesticides that require EPA regulation under FIFRA include: organophosphate pesticides and carbamate pesticides, both of which affect the nervous systems of insects, and prethroid pesticides, which are the synthetically modified version of pyrethrin (found in chrysanthemums), some of which affect insects' nervous systems.

EPA-regulated pesticides must be labeled, and using them in any way not prescribed on the label violates federal and state law. One component of the EPA-mandated label on regulated pesticides is the signal word, which reflects the highest toxicity level associated with mandated toxicity studies of the pesticide. Toxicity involves the capacity of a substance to cause harm or death. Both acute toxicity – caused by a single exposure to the substance – and chronic toxicity – caused by repeated low doses over time – are considered. Acute effects may be skin rashes, respiratory

problems, damage to eyes, nerve damage, or death. Chronic toxicity could contribute to cancer, organ damage (kidney, liver), birth defects, genetic mutations.

EPA-regulated pesticides are grouped by signal word into the following 4 categories:

I. Danger
Most toxic. Many require skull-and-crossbones poison label. Most are "restricted-use pesticides", which only a licensed person can purchase, store, or use.
II. Warning
III. Caution
IV. No signal word required

When using an EPA-regulated pesticide, the Department of Public Works, or their contractor, shall use the least toxic pesticide, as reflected in the EPA signal word on the label, that is practical and effective to resolve the problem.

When use of an EPA-regulated pesticide is required, public notification will be made as detailed below and in accordance with applicable NJDEP regulation. Notification of the pesticide application will be prominently posted at the entrance to the treatment area/site and on the Borough website. Notice will be provided 48 hours in advance of the application. The following information will be provided: common name of pesticide; EPA registration number; expected date and time of the application; contact information for the IPM/Coordinator/DPW; and any further information from the pesticide label that is relevant for public safety. After treatment, notice will be provided in the same places for a minimum of 72 hours.

If emergency use of an EPA-regulated pesticide use is required, the same notification will be made within 24 hours before the application, and the notification will remain posted for 72 hours after the application. Emergency pesticide use is warranted when public health or safety is threatened.

**IV: PUBLICITY; PESTICIDE-FREE ZONE LADYBUG SIGNS AT SPECIFIC SITES**

The Borough of Chatham will publicize this Integrated Pest Management Plan on the Chatham Borough website and in other appropriate ways. Pesticide-Free Zone signs will be posted at appropriate and visible municipal locations, including the Chatham Borough Community Garden, Shepperd Kollack Park, Memorial Park, and Stanley Park.

NJDEP encourages homeowners and businesses to use IPM and to reduce pesticide use wherever possible. It is hoped that the Pesticide-Free Zone signs and the publicizing of this IPM Plan will encourage homeowners and businesses in Chatham Borough to use IPM and to reduce pesticide use wherever possible,

This plan may be updated as necessary to reflect new management tools or options.

Sources consulted in developing this plan:

NJDEP websites: www.state.nj.us/dep/enforcement/pcp/ipm; www.njpcp.org

Rutgers Cooperative Extension Pest Management Office: www.pestmanagement.rutgers.edu

EPA websites: www.epa.gov/pesticides/about/types.htm; www.epa.gov/oppbppd1/biopesticides/regtools/25_list.htm

www.epa.gov/pesticides/regulating/labels/pest-label-training/module 2/page 2.htm

Sustainable Jersey: www.sustainablejersey.com ; certified IPM Plans from Bernards Twp., West Windsor Twp., Summit