



PERMIT NO. ALS000032

Application of Pesticide, Herbicide, & Fertilizers

Permit Part II B.8.



APPLICATION OF PESTICIDE, HERBICIDE, & FERTILIZERS

PERMIT PART II B.8.

National Pollutant Discharge Elimination System (NPDES) permits are required for any point source discharge to waters of the United States from the application of (1) biological pesticides and (2) chemical pesticides that leave a residue. The U.S. Environmental Protection Agency identified four pesticide use patterns that generally include the full range of pesticide application activities that meet this condition, including mosquitoes and other flying insect pests, weeds and algae, animal pests, and forest canopy pests. This includes point source discharges from entities such as irrigation and mosquito control districts, federal, state, and local governments, and for-hire pesticide applicators. The purpose of this Standard Operating Procedure is to document stormwater pollution prevention procedures for storage, mixing, disposal and application of pesticides, herbicides, and fertilizers.

PESTICIDE, HERBICIDE, AND FERTILIZER APPLICATION PROGRAM SUMMARY

In accordance with the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, issued on March 1, 2018 the City is required to implement controls to reduce, to the MEP, the discharge of pollutants related to the storage and application of PHFs applied by employees or contractors, to public rights of way, parks, and other public property. The City shall implement programs to encourage the reduction of the discharge of pollutants related to application and distribution of PHFs. For those controls implemented, the City will obtain coverage and maintain compliance with ADEM NPDES Pesticide General Permit ALG870000, if applicable, or other applicable NPDES permits.



BIRMINGHAM'S PHF FACILITIES & RESTRICTED SPRAY AREAS & STORAGE LOCATIONS:

❖ Restricted Spray Areas

- **Village Creek Watershed**
 - Roebuck Springs & Run
- **Valley Creek Watershed**
 - Nabors Branch
- **Cahaba River**
 - Lake Purdy Watershed

❖ PHF Storage Facility Areas

- 501 6th Avenue S.
- 800 Golden Flake Drive
- 346 Gloria Road (Cooper Green Ballfield)
- 1901 Green Springs Avenue (George Ward Softball Complex)

The City of Birmingham shall address priorities to include the following elements:

- ✓ Identify all areas known to receive high applications of PHFs; develop a program to detect improper usage, and prioritize problem areas
- ✓ Require evidence of proper certification and licensing of all applicators contracted to apply pesticides and/or herbicides on municipal property; require that applicators contracted to apply fertilizer are qualified in utilizing proper nutrient management practices. Furthermore, applicator contracts are required to include a copy of this Stormwater Management Program Plan and all contractors are to be made aware of its provisions as a condition of contract acceptance and work at all designated City venues
- ✓ Maintain an inventory of on-hand PHFs with information about the formulations of various products, including how to recognize the chemical constituents from the label, their respective uses, directions and precautions for applicators that explain if products should be diluted, mixed or only used alone, and, proper storage of products
- ✓ Equipment use and maintenance
- ✓ Training in safe use, storage and disposal of PHFs
- ✓ Inspection and monitoring of facilities where PHFs are stored
- ✓ Record keeping

The U.S. Environmental Protection Agency (EPA) regulates the sale, distribution and use of pesticides in the USA under the statutory framework of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to ensure that when used in conformance with FIFRA labeling directions, pesticides will not pose unreasonable risks to human health and the environment. When EPA approves a pesticide for a particular use, the Agency imposes restrictions through labeling requirements governing such use. The restrictions are intended to ensure that the pesticide serves an intended purpose and avoids unreasonable adverse effect. It is illegal under Section 12)(a)(2)(G) FIFRA to use a registered pesticide in a manner inconsistent with its labeling.¹

Application and use of pesticides, herbicides, and fertilizers are within the purview of the City of Birmingham Departments of Public Works and Parks and Recreation. The goal of the City's Pesticide, Herbicide, and Fertilizer Program is to:

- ❖ Provide for safe public use surfaces throughout the City
- ❖ Ensure compliance with all federal and state applicators laws and requirements
- ❖ Ensure employees quarterly attend Core Leadership meetings and annually attend stormwater pollution prevention training
- ❖ Employees performing the procedures in this standard operating procedures manual should read and refer to the materials in this document
- ❖ Use the least amount of product necessary

¹ [USEPA Fact Sheet for PHF. 2016. Pg. 6](#)

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- ❖ Reduce or eliminate species resistance to the application of targeted products
 - ❖ Pesticide application must be done only under the supervision of a Certified Pesticide Applicator or qualified Supervisor.
 - ❖ All employees who handle or apply pesticides, herbicides or pesticides should be trained on the most recent Material Safety Data Sheets (MSDS)

The discharge of pesticides (both Biological and Chemical) by the City of Birmingham is limited primarily to mosquito and other flying insect pest controls, weed and algae controls as described below. The City does not operate any treatment controls for animal pests or forest canopy pests in any general sense.

Mosquito and Other Flying Insect Pest Control - This use pattern includes the application, by any means, of chemical and biological insecticides and larvicides into or over water to control insects that breed or live in, over, or near waters of the United States. Applications of this nature usually involve the use of ultra-low volume sprays or granular larvicides discharged over large swaths of mosquito breeding habitat and often are performed several times per year.

Weed and Algae Pest Control- This use pattern includes the application, by any means, of contact or systemic herbicides to control vegetation and algae (and plant pathogens such as fungi) in waters of the United States and at water's edge, including ditches and/or canals. Applications of this nature typically are single spot pesticide applications to control infestations or staged large scale pesticide applications intended to control pests in several acres of waterway or associated upland areas on or within City rights-of-way. Pesticide applications in a treatment area may be performed one or more times as may be needed to control the pest problem.

Additionally and consistent with the 2006 NPDES Pesticides Rule and the 2011 Pesticide General Permit (PGP), the draft 2016 PGP does not cover spray drift resulting from pesticide applications. Instead, to address spray drift, EPA is actively engaged in several initiatives to help minimize pesticide drift problems such as: (1) establishing a new voluntary Pesticide Drift Reduction Technology (DRT) program; (2) evaluating potential for drift as a routine part of pesticides risk assessments; (3) in U.S. Environmental Protection Agency 2016 Draft NPDES Pesticide General Permit Fact Sheet and collaboration with experts, improving scientific models and methods for estimating drift and risks from drift; (4) strengthening labeling for new pesticides and when re-evaluating older pesticides; (improving the clarity and enforceability of product label directions and drift management restrictions; and (5) promoting applicator education and training programs. More information on EPA's work on reducing pesticide drift is available at: [EPA Pesticide Drift Reduction](#). Regardless, the City of Birmingham makes every effort to control the use and application of spray pest controls to minimize overspray beyond the intended spray use area. This will be discussed in more detail in a later section.



PESTICIDE, HERBICIDE, AND FERTILIZER STORAGE AND APPLICATION AREAS:

The “restricted spray” (Environmentally Sensitive Areas) (Exhibit 8.A.1), along with PHF storage areas (Exhibit 8.A.2) have been mapped and are included in the Exhibits section of this document. The City’s PHF Program is operated out of the Departments of Public Works and Parks and Recreation. Addresses where chemical storage areas are located are presented in the heading banner.

STANDARD OPERATING PROCEDURES FOR PESTICIDE, HERBICIDE, AND FERTILIZER APPLICATION AND USE BEST MANAGEMENT PRACTICES

This Section of the SWMPP will focus on:

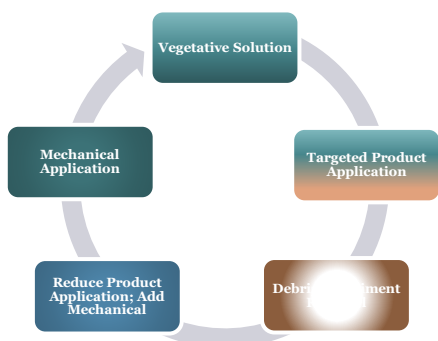
- ✓ Program Objectives
- ✓ Program Approach
 - Integrated Pest Management Strategy
 - Prioritize problem areas
- ✓ Program protocols, Inspection, and Monitoring of PHF Storage Facilities
 - Protocols
 - Equipment use and maintenance
 - Maintain an inventory PHF “on-hand” PHFs
 - Proper storage of PHFs

Objectives: The primary objectives in pesticide and herbicide control usage by City staff is for: (1) Prevention – Keeping a pest from becoming a problem; and (2) Suppression – Reducing the pest numbers or their damage to an acceptable level or preventing growth to an excessive size.

In 2016 the Horticultural Division prepared a Pesticide Discharge Management Plan. That plan identified the following seven discharge management objectives:

- ❖ All areas to receive herbicide applications will be inspected prior to each application being performed. Inspections will be done by a Horticulture Operations Manager or Horticulture Maintenance Supervisor. Any and all have the responsibility to inspect and notify of any potential issues prior to or following a herbicide application.
- ❖ Any areas where herbicide application may promote or exasperate an erosion or washing problem will be avoided and the responsible Department Head will be notified.
- ❖ All areas will be inspected within thirty (30) to forty-five (45) days post treatment.
- ❖ All drainage channel treatments will be selective, unless the area of treatment is rock lined or concrete.
- ❖ Detailed maps of all areas for each application will be kept on file. Some sites will have both maps and location lists with the dates of treatment.

- ❖ Photo documentation will be done on a yearly basis as per the governing bodies requirements.
- ❖ Horticulture Operations Managers and/or Horticulture Maintenance Supervisors will be responsible for implementing any corrective actions and documenting all herbicide applications in the field.



Landscape maintenance activities include vegetation removal; herbicide and insecticide application; mechanical mowing, fertilizer application; watering and other gardening and lawn care practices, as was mentioned earlier in this section. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods with the overall stated purpose of creating safe playing surfaces for all City residences and visitors. All

maintenance practices have the potential to contribute pollutants to the storm drainage system. The major objective of this BMP is to create a vegetative solution to reclaim areas of predominantly noxious, non-native vegetation to an area largely made up of native plants through chemical treatment and mechanical means, in regular maintenance rotation, while minimizing the discharge of pesticides, herbicides and fertilizers into the storm drainage system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings; and educating employees and the public. Encouraging native grasses by removal of non-native vegetation and opening up an area overwhelmed by exotic understory reduces non-point source pollution while improving public safety.

Furthermore, the objective provided by Mosquito control is to provide the citizens of Birmingham with reasonable mosquito control by being proactive to address the potential for public health problems due to mosquito borne diseases before becoming a problem.

Approach:

The approach used by the City of Birmingham, Departments of Public Works and Parks & Recreation, to prevent pollution is through an Integrated Pest Management (IPM) approach. IPM is a sustainable, best practices approach to managing pests by combining biological, cultural, physical, and chemical tools to minimize undesirable vegetative regrowth through selective removal of non-native vegetative species while promoting natural, native grasses. The intent is to encourage the proliferation of native grasses and plants because they are better for soil stability and can filter non-point sources of runoff pollutants before discharging onto roadways or into storm drains. Ultimately the best integrated pest management plan is one which reduces the biomass of undesirable vegetative material while using the least amount of herbicide products.

Best management practices in this approach are intended to:

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- ❖ Control noxious, non-native vegetative species by reducing the number of cutting cycles and the amount of biomass processed. Use of selective herbicide products and fertilizers eliminates weed growth while releasing native grasses to grow and flourish is preferred.
 - ❖ Choose low water using flowers, trees, shrubs, and groundcovers
 - ❖ Consider alternative landscaping techniques such as nature-scape and xeriscape
 - ❖ Conduct appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to help preserve the landscapes' water efficiency.
 - ❖ Consider grass recycling. Grass recycling is the natural recycling of grass by leaving the clippings on the lawn when mowing. Grass clippings decompose quickly and release valuable nutrients back into the lawn, thereby reducing the need for follow-up organic fertilization if fertilization would even be needed at all.
 - ❖ Through the use of GIS mapping software, identify repeat treatment areas as priority problem areas and develop solutions to overcome the problems and remove those areas from the priority problem area list.
 - ❖ Prevent the discharge of lawn clippings and soil materials from entering into the municipal separate storm sewer system (MS4) to the maximum extent practicable

If it is determined that more than one pesticide will control the targeted pest, City staff will use the one that is the least hazardous to the environment and safest in the given situation.

Considerations in making a formulation choice, include:

- ❖ Effectiveness against the pest
- ❖ Plant, animal or surface to be protected
- ❖ Available application equipment
- ❖ Application cost
- ❖ Hazards to the applicator or to other persons, plants, and animals
- ❖ Movement out of the target area as drift
- ❖ Movement on the soil surface through runoff or erosion
- ❖ Movement through the soil in water (leaching)
- ❖ Residue persistence during vegetation removal
- ❖ Evaporation and drift (vaporization and volatilization)

Most pesticide applications involve formulations that must be diluted with water so that it can be handled by the application machinery and spread evenly over the area to be treated. General instructions given to applicators to safely mix and load pesticides, includes:

- ❖ Before using any pesticide or herbicide, read the entire label, especially for specific warnings and always follow the manufacturer's recommendations for mixing, application and disposal

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- ❖ Follow directions carefully and use only the amount directed at the time and under the conditions specified, and for the purpose intended and listed
 - ❖ Wear protective clothing recommended by the label
 - ❖ Do not work alone, especially at night
 - ❖ Choose a place with good light and ventilation to mix or load pesticides and herbicides
 - ❖ Avoid mixing in the tank until after you have checked out both the job site and equipment
 - ❖ When filling sprayer equipment, use only water sources with check valves to prevent back siphon
 - ❖ Never let the filler hose dip into the spray tank
 - ❖ After filling the spray tank with half the amount of water required for the tank mix needed, be sure to check the equipment under pressure in use for leaks involving any part of the equipment (e.g. pump, hose, hose reel, tank, regulators, filters, and piping)
 - ❖ Be sure the sprayer doesn't overflow contaminating the surrounding environment
 - ❖ No mixing is to be done in the field, but only at the maintenance facility designated for mixing and mix only what is needed
 - ❖ Label all containers and never transfer pesticides and herbicide to containers not intended for them, such as empty soft drink bottles
 - ❖ Keep all pesticides in containers that clearly and prominently identify the contents

With most applications being made with either hand held spray tanks or large motorized ground spray equipment, the risk of spray drift is ever present. To minimize drift, the City advocates the use of the following techniques:

- ❖ Use appropriate spray equipment and calibration settings for task at hand
- ❖ Spray at low pressure
- ❖ Use spray tips with narrow discharge angles
- ❖ Use the largest practical nozzle openings
- ❖ Use spray additives to increase solution cohesion
- ❖ Spray during the calmer parts of the day, usually in the early morning or late evening hours
- ❖ Make attachments or modification to the spray equipment such as extended nozzle lengths to allow the application to be made closer to the ground

Proper clean-up and safety measures are equally important. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen back onto grassy areas. Mixing, loading and application equipment must be cleaned as soon as finished. Clean both the inside and outside,



including the nozzle. Only trained individuals and wearing proper clothing is required. To ensure that all containers are empty of product, each applicator shall:

- ❖ Empty the container into the spray tank, letting it drain bottom up for 30-seconds
- ❖ Add rinse water and rinse the container, pouring it back into the spray tank and draining for another 30-seconds. Repeat this three times
- ❖ All pesticide and herbicide containers are to be punctured and/or crushed and placed into the solid waste stream for sanitary landfill disposal. In Alabama, all approved sanitary landfills are to accept triple rinsed containers

The applicator is responsible for the safe transport and use of the pesticide(s) and herbicide(s) being used. Additional instructions given to the applicators regarding these details include:

- ❖ Transport pesticides in the back of a truck. Place containers so they cannot shift, roll, or bounce during transport. Fasten down all containers to prevent breakage and spillage. Keep pesticides away from food, feed and passengers. All pesticides and herbicides being transported should be in a correctly labeled package, keeping paper and cardboard packages dry at all times. If any pesticide is spilled in or from the vehicle, clean it up right away using correct clean-up procedures and not allowing any spilled materials from running off into a storm drainage system. Do not leave unlocked pesticides and herbicides unattended
- ❖ Keep a copy of the product labels being transported and used with the applicator during spray applications
- ❖ Replace pour caps and close containers after each use
- ❖ Clean-up splashes or spills while mixing or loading right-away
- ❖ Keep a tight lid on the spray tank to prevent inadvertent splashing or leaking onto the ground
- ❖ Do not walk away from any tank being filled; it could overflow and cause contamination of the ground or nearby storm drain or stream

When or if a spill does occur, the following protocols are to be addressed immediately and properly clean up the spill:

Minor Spills:

- ❖ Keep people away by roping off or flagging the area. Leave someone to stand by the area if spill kits are not immediately local to avoid foot traffic contamination or increasing the size of the spill
- ❖ Confine the spill
- ❖ Give immediate first aid if spilled onto a person
- ❖ Use absorbent materials to soak up the spill (e.g. soil, saw dust, kitty litter, or special products made to do this). Pick up the absorbent into a leak proof container for disposal

in accordance with product labels. Do not hose down the area into nearby storm water drains

- ❖ Always work carefully; Do not hurry
- ❖ Keep people away until all spills are cleaned up

Major Spills:

- ❖ If major spill occurs on a city street, a county road, a highway or an interstate, call 911 and report it. You may also call the Jefferson County Emergency Management Agency (205-254-2039). All applicators must keep this telephone number in the truck
- ❖ Keep people away from the spill and confine it as best you can with the spill kit in the truck
- ❖ Do not leave the scene until help arrives
- ❖ Report all major spills by phone to the state pesticide agency. The National Agricultural Chemicals Association has a pesticide safety team network. They can advise you what actions are needed or they can send a safety team to clean up the spill. They can be reached toll free at any time by calling (800-424-9300).
- ❖ Notify Birmingham Stormwater Management at (205) 714-8644 at your earliest opportunity. However, by notifying 911 and/or Jefferson County Emergency Management, all other supporting agencies will be contacted by the warning point coordinator

Product Storage:

All pesticide and herbicide products in use by the City are stored in locked and posted locations. Locations are listed in the banner margin on Page 1 of this BMP section. The location maps are in Exhibit 8.A.2. All storage facilities are dry, heated and cooled to prevent the product from becoming unstable or frozen, and out of direct sunlight. The possibility of fire damage is at a minimum and inspected regularly by Fire. Containers are checked for leaks at the time of storage and if damaged, are transferred to a container that has held exactly the same product. Any spills are cleaned up immediately. An up-to-date inventory of all products are kept for accounting purposes.

Program Protocols and Inspection: Program protocols represent the most appropriate BMP controls to address mowing, weeding, trimming, planting, waste management, irrigation, fertilizer and pesticide management. The following represent a comprehensive list of representative BMP protocols being used by the City of Birmingham through its PHF Program, as follows:

- ❖ Mowing, Trimming and Weeding
 - ✓ Avoid loosening soil when conducting mechanical or manual weed control; this could lead to erosion. Use mulch or other erosion control measures when soils are exposed



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- ✓ Mulching mowers may be recommended for certain areas. Other techniques may be employed to minimize mowing such as selective vegetative planting using low maintenance grasses and shrubs
 - ✓ Collect lawn and garden clippings, prune waste, tree trimmings and weeds. Chip if necessary, and compost or dispose of at one of the City's landfills
 - ✓ Place temporarily stockpiled material away from watercourses, and berm or cover stockpile to prevent material releases to storm drains
- ❖ Planting
- ✓ Determine existing native vegetation features (location, species, size, function, and importance) and consider the feasibility of protecting them. Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements and possible conflicts between preserving vegetation and the resulting maintenance needs
 - ✓ Retain and/or plant selected native vegetation whose features are determined to be beneficial, where feasible. Native vegetation usually requires less maintenance (e.g. irrigation, fertilizer) than planting new vegetation
 - ✓ Consider using low water use groundcovers when planting or replanting
- ❖ Waste Management
- ✓ Dispose compost leaves, sticks or other collected vegetation at a permitted landfill. Do not dispose collected vegetation into waterways or storm drainage systems
 - ✓ Place temporarily stockpiled material away from watercourses, flow-ways, and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system. Stockpiled materials should not remain uncovered for more than 5-working days to minimize wind and water erosion of materials
 - ✓ Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming
 - ✓ Avoid landscape wastes in and around storm drain inlets by either using bagging equipment or by manually picking up the material
- ❖ Irrigation
- ✓ The City is in the process of changing all irrigation timers throughout the City to ensure that rainfall sensors are now in use wherever watering is applied to City properties to minimize runoff
 - ✓ Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken. At the City grow house, use drip irrigation or overhead sprinklers and irrigate only as is minimally necessary for plant sustenance.

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- ✓ If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas
 - ✓ Irrigate slowly to prevent runoff and then only irrigate as much as is needed
 - ✓ Apply water at rates that do not exceed the infiltration rate of the soil
 - ✓ During drought restrictions do not use finish water but use water purchased as quarry water.
- ❖ Pesticide, Herbicide and Fertilizer Management (Including Mosquito Control)
- ✓ Only Certified Applicators will be allowed to make any pesticide applications. Exceptions will be made for training purposes and mosquito control applicators, which are not required by the State to be certified. All applicators perform their duties under the direct supervision of a Certified Pesticide Applicator.
 - ✓ Aquatic spraying for nuisance algal species will only be done by non-City, certified contractual employee applicators. Aquatic spraying of lake systems must follow all label instructions and shall not ever spray more than 50% of an aquatic systems water surface area at a time, separated by several weeks before added spraying may be done to complete the effort, and only then if target species of algal remain in a growth state. This will help to maintain oxygen saturation in the system to avoid an oxygen deficit and resultant fish kills.
 - ✓ Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:
 - ✧ Mulching can be used to prevent weeds where turf is absent or fencing installed to keep rodents out
 - ✧ Visible insects can be removed by hand and placed into soapy water or vegetable oil. Alternatively, insects can be sprayed off the plant with water
 - ✧ Store-bought traps, such as species-specific, pheromone-based traps or colored sticky cards can be used
 - ✧ Beneficial organisms, such as bats, birds, ladybugs, praying mantis, etc. that prey on detrimental pest species can be promoted
 - ✧ Alternate fertilizer mixes to select for native grasses that also minimize growth of nuisance turf grasses and deleterious plant insects
 - ✧ Store mulch materials for citywide use away from stormwater inlets and steep slopes
 - ✓ Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators
 - ✓ With the exception of Mosquito control, the City uses pesticides only if there is an actual pest problem (not on a regular preventative schedule). Mosquito

fogging is performed in accordance with a spray schedule during the period April through November, inclusive, as long as the temperatures during this period remain above 50° daily. The fogging schedule for FY2017 is included in Exhibit 8.B. A summary table of all pesticides being used by the City is included in Exhibit 8.C.

- ✓ Do not use pesticides or herbicides if rain is expected and apply pesticides and herbicides only when wind speeds are low (<10 mph) and the area of product application is not in use by the public
- ✓ Do not mix or prepare pesticides for application near storm drains. Mosquito chemicals are purchased premixed.
- ✓ Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest. Alternate chemical usage to reduce pest chemical resistance
- ✓ Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques. Use additives to reduce spray drift and reduce being washed off foliage by rain or irrigation. Neighborhoods and/or residences that request “No-Spray” are granted such requests and placed onto a “No-Spray” map. “No-Spray” zones are typically 1-square block in size for mosquito spraying and for herbicide spraying are limited only to the parcel or property boundaries requested to be placed onto the “No-Spray” map.
- ✓ Calibrate fertilizer and pesticide application equipment to avoid excessive application. Calibration of mosquito control equipment is performed at the beginning of each season
- ✓ Periodically test soils for determining proper fertilizer use or otherwise as may be necessary for potted plants
- ✓ Sweep/blow pavement and sidewalks back towards lawn areas if fertilizer is spilled on these surfaces before applying irrigation water or before a rainfall event
- ✓ Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product)
- ✓ Triple rinse containers, and use rinse water as product, if possible. Dispose of unused pesticide as hazardous waste
- ✓ Dispose of empty pesticide containers according to the instructions on the container label
- ✓ Spill kits are located at chemical mixing sites and/or located with each driver

❖ Inspection and Monitoring

- ✓ All areas to receive herbicide applications are inspected, mapped and evaluated prior to and following any treatments. Throughout the City are 99-

neighborhoods, which are divided into 4-quadrants for the application of mosquito controls. Each quadrant (North, East, South, & West) each have 1-driver and all 99-neighborhoods are fogged in 1-week.

- ✓ Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed
- ✓ Inspect pesticide/fertilizer equipment and transportation vehicles daily to repair obvious leaks and clean-up unintended spills before traveling
- ✓ Inspect pesticide/fertilizer storage areas daily
- ✓ Ensure all pesticides and fertilizers are maintained in dry storage enclosures and clean up any and all spills when observed. See Exhibit 8.A.2 for map locations.

CERTIFICATION, LICENSING AND TRAINING PROGRAM ELEMENT:

The Alabama Pesticide Law of 1971, the Custom Pesticide Applicator Law of 1971, and the Professional Service Law of 1940 all regulate the sale, distribution, transportation, and application of pesticides in Alabama. Responsibility for administration and enforcement of these laws is vested in the Alabama Commissioner of Agriculture and Industries. These laws prohibit the use, handling, or disposal of pesticides and pesticide containers in a manner that would cause injury to humans, animals or the environment. Anyone desiring to use “restricted use” pesticides must be certified to ensure the applicators know the safe and correct way of handling and applying pesticides.

The Environmental Protection Agency has established minimum competency standards for pesticide applicators. These minimum standards include a practical knowledge of such subjects’ area as pest identification, pest control, label comprehension, pesticide laws, and environmental considerations. The actual certification of applicators is the responsibility of each individual state. In Alabama, the Department of Agriculture and Industries is the agency responsible for certification of pesticide applicators. The Department issues certified applicators a permit, which is necessary in order to purchase or apply “restricted use” pesticides in Alabama. A specific category is determined by the type work done by the applicator and the method of application. Commercial applicators are licensed only for the category or categories for which they have proven to be competent.

Competency is determined on the basis of a written examination, which includes the general standards applicable to all categories and the additional standards specific for each category. The City requires that all classified employees handling “restricted use” pesticides must either work for or be themselves licensed as an Ornamental and Turf Pest Control Applicator for either the Commercial or Custodial Applicator License or Right-of-Way (ROW) and Grounds Applicator License as a requirement of their job duties.

Ornamental and turf pest control applicators apply pesticides to ornamental and turf grasses, such as to golf courses, City parks, cemeteries, and other public areas. By comparison, ROW pest control applicators maintain or control weeds and woody plants along public roads, utility and pipeline easements, railway ROW or other similar areas.



Training and licensure is a foremost requirement among City policies to ensure the effective and safe use of pesticides, herbicides, and fertilizers to protect the public and the environment in the exercise of their duties. These principles require the applicator to:

- ❖ Identify the pest
- ❖ Know what appropriate control methods are available
- ❖ Evaluate the benefits and risks of each method or combination of methods
- ❖ Choose the methods most effective and causing the least harm to humans and the environment
- ❖ Know the correct use of methods
- ❖ Know local, state and federal regulations that apply to the situation
- ❖ Keep detailed records that include chemical applied, rate of application, location of application, target pest, date of application, weather conditions to include temperature, wind speed and direction, percent chance of rain
- ❖ Check prior weather conditions and extended weather outlook before spray applications

It is noteworthy that the Department of Public Works and Parks and Recreation applicator supervisors hold regular safety meetings with all employees involved with pesticide and herbicide use and application. The City has not ever had a major spill or any kind of violation, fine or imprisonment of any employee whose applicator permit was suspended or revoked for any reason.

The City also maintains and updates this content from time to time as new information related to PHFs is discovered. In addition, the City develops and makes available public education materials on the application and management of PHFs as part of the City's MS4 Public Education program. **Keep a list of all employees trained in a facility file that is to be used annually to document the number of employees trained annually to the State.** Although commercial landscaping chemical applicators have to obtain the same state certifications that the municipal applicators, they are included in the City's public education efforts associated with PHF application. Table 8-1 below summarizes the City's training efforts for the Department of Public Works, which includes staff from the City Forestry and Horticulture Divisions and responsible for managing PHFs and their application. During these sessions, an overview of the stormwater pollution and control measures is provided. Training & disposal

- ✓ Educate and train employees on the use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of an Alabama qualified pesticide applicator
 - ✓ Train/encourage municipal maintenance crews to use IPM techniques for managing public green areas
 - ✓ Annually train employees within departments responsible for pesticide application on the appropriate portions of the Department's IPM Policy, SOPs and BMPs and the latest IPM techniques
 - ✓ Use a training log or similar method to document training
- ❖ Program to detect improper usage

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- ✓ Report all spills to the unit supervisor for tracking purposes
 - ✓ Have spill cleanup materials readily available and in a known location
 - ✓ With assistance from Stormwater Management, the Department of Public Works will develop a Stormwater Pollution Prevent Plan (SWPPP) to address the potential for spills at all facilities storing pesticides, herbicides, and fertilizers, which may come in contact with storm sewers if a spill were to occur. The SWPPP will be completed during the term of this permit period.
 - ✓ Cleanup spills immediately and use dry methods if possible
 - ✓ Properly dispose of spill cleanup materials



CONCLUSIONS

Section Contributors:

- ❖ *Teddy Kapera, Horticulture Operations Manager/DPW (205-714-8676)*
- ❖ *Donna G. Kent, Horticulture Operations Manager/Parks & Rec (205-781-6210)*
- ❖ *Lane D. Neura, Horticulture Operations Manager/DPW (205-254-6363)*
- ❖ *Rhoda C. Noe, Horticulture Operations Manager/DPW (205-781-6210)*

Major Findings:

Major Accomplishments:

Program Strengths/Weaknesses: *Weakness is the City's inability to actually perform field mosquito population monitoring Citywide to maximize effectiveness of and limit the extent of spraying only to those areas identified as having high mosquito population densities. Where pre-spray monitoring to be done, the use of mosquito chemicals would be reduced and the areas of spraying would be anticipated to also be reduced. Although that might represent a chemical cost savings, it would require significant additional staffing capacity to perform the advance population monitoring and maintain existing spraying schedules.*

Future Direction:

APPLICATION OF PESTICIDE, HERBICIDE, & FERTILIZERS

APPENDIX INDEX

EXHIBIT A - MAPS

A.1 – RESTRICTED SPRAY AREAS

A.2 – BIOCIDES STORAGE AREAS

EXHIBIT B - SCHEDULES

B.1 – MOSQUITO FOGGING SCHEDULE

EXHIBIT C - CHEMICAL SUMMARY TABLE

C.1 – MOSQUITO FOGGING SCHEDULE

EXHIBIT D - TRAINING POWERPOINT PRESENTATIONS