

*This publication is intended
for school and child care
facility staff and pest
management professionals.*

Integrated Pest Management

FOR GEORGIA SCHOOLS & CHILD CARE FACILITIES



Brian Forschler and Daniel Suiter
Department of Entomology, University of Georgia
Derrick Lastinger and Jennifer Wren
Structural Pest Section, Georgia Department of Agriculture

Table of Contents

Introduction	3
Overview of Integrated Pest Management	4
Acknowledgements	4
Chapter 1: Georgia School IPM Laws and Regulations	5
Licensing	5
Laws and Regulations	5
GDA Monitoring and Complaints	6
Technical Assistance	6
Chapter 2: Implementing an IPM Program for Schools and Child Care Facilities	7
Establishing an IPM Communication Committee (IPMCC)	7
Integrated Pest Management (IPM)	8
Inspection	8
Pest Identification	9
The Action Plan: Development and Deployment	9
Re-Evaluation of the Action Plan's Success	11
Communication of each Component and Education of Staff	12
Monitor and Adjust when Necessary	12
Chapter 3: Selecting IPM Services for Georgia Schools and Child Care Facilities	13
Contracting an IPM Service Provider	13
Pest Management Bid Specifications	13
Chapter 4: Sample Forms	14
i. Sample Contract for Structural Pest Control Services	14
ii. Pest Sighting Log	21
iii. Inspection Checklists	22
iv. Pesticide Use Log Sheet	22
Chapter 5: Resources	27

Introduction

Most people have little tolerance for pests in and around buildings. Pests can be a nuisance as well as serious economic or health-related threats: they damage property, contaminate and destroy food, and sometimes transmit diseases. Stinging insects, such as fire ants, may cause anaphylaxis in allergic individuals. Research has indicated that children are especially at risk from



pests. For example, cockroaches and their remains are recognized as a source of allergens that can trigger asthma attacks in children. Cockroaches, mosquitoes, flies, ticks, fleas, rodents, and birds can vector disease-causing viruses, bacteria, fungi and other microorganisms.

Pest management is necessary to safeguard the health of children and other occupants of schools and child care facilities. Pest management programs

that rely on routine application of pesticides, however, can unnecessarily expose children to pesticide residues. Compared to adults, children are at risk from pesticide exposure because of their rapid growth, small body size, and habits. Younger children may spend considerable time on floors. They touch various surfaces and objects, and they often put their hands into their mouths. These behaviors increase the potential for inadvertent exposure to pesticides.

Schools and child care centers are encouraged to commit to Integrated Pest Management (IPM) approaches to pest management that are effective and that lessen risks from unintended pesticide exposure. In an effort to reduce the impact of pests and pesticides on the health and well-being of children and other occupants of schools, the Georgia Structural Pest Control Commission (GSPCC) amended the rules of the Georgia Structural Pest Control Act (GSPCA). The rules of the GSPCA place restrictions on the timing and placement of pesticide applications and posting requirements for pest management professionals (PMPs). Although there is currently no law requiring schools and child care facilities to adopt IPM programs, we encourage them to shift to an IPM approach to pest control.

OVERVIEW OF INTEGRATED PEST MANAGEMENT

Definition

IPM is a philosophy of pest management based on a decision-making process aimed at achieving sustainable reductions in pest populations and their potential for growth. Successful IPM programs incorporate judicious use of control methods, including, but not limited to, sanitation, habitat modification, exclusion, repellents, pheromones, and pesticides.

Goal

The overall goal of IPM in schools and child care facilities is to maintain a safe environment for building occupants by preventing, reducing, or eliminating pest problems while using reduced-risk pest management methods. The keys to IPM are:

- Identifying current pest problems and communicating information about the most common potential pests to the relevant facility personnel
- Knowing the specific resources (such as food, water, and shelter) needed by each pest
- Identifying the availability of those pest-relevant resources in and around the facility
- Eliminating or reducing access to those resources using a variety of interventions including building and landscape-specific maintenance and sanitation procedures
- Conducting regular site-visits to inspect and monitor pest issues
- Maintaining appropriate records of all issues and treatments
- Applying pesticides only when needed

IPM programs do not use pesticides on a routine schedule or apply them to all surfaces. Pesticides are used only when and where inspection and monitoring indicate that the pest population has reached an unacceptable level or when other approaches are not feasible or practical. If a pesticide is needed, the product, the application method, placement, and the timing of the treatment must be effective against the target pest(s) and minimize exposure to staff and students.

Components of IPM Programs

There are six essential components of IPM:

1. Inspection

2. Pest Identification

3. The Action Plan: Development and Deployment

4. Re-Evaluation of the Action Plan's Success

5. Communication of each Component and Education of staff when required

6. Monitor and Adjust when Necessary

Our hope is that this manual will encourage schools and child care facilities to develop and implement IPM programs and train their personnel to become familiar with IPM practices. IPM in itself is not a goal to be reached, but a way to achieve the goal of effective, sustainable pest management.

ACKNOWLEDGEMENTS

Funding for the original version of this manual was provided, in part, by the Georgia Department of Agriculture and the U.S. Environmental Protection Agency.

We would like to thank the Georgia Structural Pest Control Commission, Georgia Department of Agriculture, Georgia Department of Public Health, Georgia Department of Education, University of Georgia, Georgia Pest Control Association and Certified Pest Control Operators of Georgia who reviewed this manual.

Unless otherwise note, photo credit D. Suiter, UGA Entomology

Chapter 1

Georgia School IPM Laws and Regulations

The Georgia Structural Pest Control Commission (GSPCC) and the Georgia Department of Agriculture (GDA) established requirements in the Rules of the Georgia Structural Pest Control Act (GSPCA) to reduce pesticide exposure risk in Georgia schools and child daycare facilities. These rules reduce the impact of pests and pesticides on the health and well-being of children and other occupants of schools.

The Georgia Department of Agriculture is the state lead pesticide regulatory and enforcement agency. In this role, the GDA monitors pesticide use for compliance with the Rules and Regulations of the GSPCC to protect the health, safety, welfare, and environment of the citizens of Georgia.

LICENSING

The GDA recommends that schools hire a licensed pest management company to provide pest management services. Companies are required to be licensed by the GDA and employ licensed technicians that have met the requirements of the GSPCA. Licensed technicians are trained to identify pests, properly apply pesticides when (or if) needed, and implement pest management practices.

For pest management on school grounds, such as mosquito or turf and ornamental pest control, GDA advises that schools hire a licensed contractor. Similarly, schools should only contract with licensed companies for antimicrobial pest control. To verify that a company or technician holds the required licenses and certifications for pest management, visit the GDA webpage at www.agr.georgia.gov or call (404) 586-1411.

Under current laws, school employees that apply pesticides are not required to have pesticide applicator licenses, unless applying restricted use pesticides. Schools are encouraged to require that staff involved in pest management complete the Georgia Competent Applicators of Pesticides Program (GCAPP). To ensure the safe use of pesticides, GDA recommends that in-house pesticide applications be limited to school employees that have completed GCAPP or employees that hold a pesticide applicator license in category 35 (Industrial, Institutional and Health Related Pest Control). GCAPP was designed to provide training for non-certified applicators. For more information about GCAPP presentations and certificates, contact University of Georgia Extension and inquire about their Pesticide Safety Education Program at 1-800-ASK-UGA1.

Public employees that use restricted use pesticides or supervise the use of pesticides as part of their job responsibilities are required to take the commercial applicator exam in category 35 (Industrial, Institutional and Health Related Pest Control). Information for the category 35 exam can be found at <http://gapestexam.com>

Additionally, pesticide applications made by non-licensed school employees should be limited to US EPA toxicity category IV products, products applied as crack-and-crevice treatments, or as containerized baits. Pesticides classified as toxicity category IV are considered the least toxic by all routes of exposure, including ingestion, inhalation, and absorption. These products can be identified by the lack of a signal word, such as "CAUTION" or "WARNING," on the pesticide label.



LAWS AND REGULATIONS

For structural pest management, companies must comply with all Rules of the GSPCA, including Chapter 620-11-01 Treatment of Schools. GSPCA defines a school as, "any school, public or private, or licensed child daycare center" and does not include colleges, universities, home schools, trade or adult education facilities.

For mosquito, antimicrobial, and turf and ornamental pest control, pest management companies must comply with all Rules of the Georgia Pesticide Use and Application Act.

Pesticide applications

These sections address regulations that pertain to pesticides applied for structural pest management by licensed pest control companies, and can serve as guidelines for non-licensed applicators.

1. Must be made in a manner that minimizes the exposure of children or students to the pesticide.
2. Are prohibited if children are present in the application area.
3. Use dilutions must be prepared outside child or student occupied areas of buildings.
4. Contracts for pest control service and all services provided must be consistent with any published pest management policy of that school system or licensed child daycare facility.

Pesticide use records

A pesticide use record must be provided to a school representative each time a pesticide is applied. The following information is required on these records:

- School name
- Address of property
- Company/contractor name and telephone number
- Technician's name and registration or certification number
- Pesticide product name
- U.S. EPA registration number of the pesticide applied
- Amount of pesticide applied
- Concentration of pesticide applied
- Method of application of pesticide applied
- Specific area of application of pesticide

- Target pest for product application
- Application date
- Times of the application start and completion, noting AM or PM
- Any post-application precautions for the product applied

Indoor pesticide application restrictions

1. Re-entry Interval (REI): a pesticide may be applied to a room only if children or students are not expected to be present in the room for a minimum of three (3) hours after application. If the product label directions specify a longer reentry interval then the longer re-entry interval will apply.
 - a. REI Exception: insecticide and rodenticide baits in tamper-resistant containers or bait stations as well as botanical insecticides, insect growth regulators and insecticidal soaps.
 - These products may be applied at any time children or students are not present in a room.
 - No re-entry interval is required except if specified by the product's label directions.
 - These products may be applied to any open area or multi-purpose room if the area within ten (10) feet of the application site is secured and no children or students are present within the secured area during the time of application.

Outdoor pesticide application restrictions and posting requirements

1. 20 feet restriction: a pesticide may be applied to outdoor school grounds if children or students are not expected to be present within twenty (20) feet of the application site at the time of application.
2. Site security and REI: areas where pesticides are applied outdoors must be secured by a fence or other similar barrier. If the application site is not secured by a fence or other similar barrier, pesticide applications may be made to outdoor school grounds only if children or students are not expected to be in the area for a minimum of three (3) hours after application. If the product's label directions specify a longer re-entry interval then the longer re-entry interval will apply.
3. Posting requirement: sites where pesticides are applied outdoors must be clearly marked with a sign to discourage entry and must include the re-entry interval statement.



Not pictured at full size.

Sign specifications must include:

- The sign must be at least 4" x 5" in size and made of sturdy, weather resistant material.
 - The printing must be in contrasting colors to the background of the sign.
 - The bottom edge of the sign must be 8 to 12 inches above the ground.
 - A re-entry statement
 - The wording and format must include:
 - “CAUTION” (72 point)
 - “PESTICIDE APPLICATION” and “KEEP OFF” (30 point)
 - SYMBOL (200 point)
 - “THIS SIGN...” (11 point)
4. Exception: insecticide and rodenticide baits in tamper resistant containers or bait stations as well as botanical insecticides, insect growth regulators and insecticidal soaps may be applied to outdoor school grounds anytime children or students are not present in the area. No re-entry interval or posting sign is required unless required by the product's label directions.

Pesticide Label

The label is the law. This applies to all pesticide applications, even those made by non-licensed persons. Always read and follow the label instructions before using a pesticide for any purpose. Without exception, all persons applying pesticides must adhere to the product's label instructions.

GDA MONITORING AND COMPLAINTS

To verify compliance, GDA inspectors audit pesticide use by commercial applicators. During these audits, inspectors review pesticide use and related records for compliance with laws, regulations and pesticide label requirements.

If the GDA receives a request to audit, or a complaint regarding pesticide use in a school, policy requires these responses be made a priority. An inspector will complete a thorough audit and the GDA will respond to non-compliance according to enforcement policy.

TECHNICAL ASSISTANCE

Schools and child care facilities may request technical assistance regarding applicator certification, pesticide applications or to request a compliance audit. In addition, GDA field staff can assist schools and child care facilities with pest identification.

Pest management professionals may also contact GDA for technical assistance regarding regulatory requirements for applicator licensing, pesticide applications and other pesticide related laws and regulations.

GDA Contact Information
 Georgia Department of Agriculture
 Structural Pest Control Section
 19 Martin Luther King, Jr. Drive
 Atlanta, Georgia 30334
 (404) 656-3641
 inspection@agr.georgia.gov

University of Georgia Extension offers diagnostic services, such as insect identification, to Georgia residents through their county offices. If you would like assistance with pest identification, Extension represents a valuable resource. For more information on Extension, visit <http://extension.uga.edu/> or call 1 (800) ASK-UGA1 to be directed to the nearest county Extension office.

Chapter 2

Implementing an IPM Program for Schools and Child Care Facilities

Pest management in schools is mostly about communication among professionals hired to rid a premises of pests and school employees whose job is to keep the learning environment pest free. Ultimately, it is about reducing, if not outright eliminating, the abundance of pests in the short- and long-term in and around schools in a manner that minimizes exposure of students to pesticides. The school must realize and appreciate that the pest management professional (PMP) is licensed and experienced in the management of pests, is held to a set of state-mandated rules and regulations, is regulated and routinely inspected by the Georgia Department of Agriculture (GDA), is required to pass a written examination, and must undergo continuous education in their field. The PMP, on the other hand, must realize that the school has the enormous responsibility of protecting the health and welfare of hundreds to thousands of the community's children and that pest management is one of many initiatives the school might be involved in at any one time. The challenges and complexities facing both the PMP and the school mandate excellent communication. The following are important components of a successful IPM program.

ESTABLISHING AN IPM COMMUNICATION COMMITTEE (IPMCC)

The success of any school IPM program depends on the cooperation of all involved. All parties should understand that they play an important role in the success of any pest management program. When considering the delivery of pest management programs in schools, it is imperative that the PMP hired by the school AND the school itself communicate effectively and routinely. Those individuals on the IPMCC should have influence on personnel and be able to direct and impact policy when and as changes are needed. A suggested IPMCC might consist of these individuals:

1. The Hired Pest Control Company's Service Technician. The Service Technician is the person who inspects and executes the day to day pest management activities at the school. Consistency in Service Technician personnel is a key to the successful management of pests at the school.

2. Pest Management Company's Designated Certified Operator (DCO). The DCO is typically the Service Technician's supervisor. In some cases, the DCO will be the Service Technician.

3. The School's Cafeteria Manager. Food handling and preparation areas are the most crucial areas for pest management because they provide all the resources (food, water, and shelter) that pests need. It is critical that cafeteria staff understand the importance of proper sanitation, kitchen management, proper food storage, and timely food disposal.

4. The School's Custodial Staff Manager. Custodial staff play a significant role in IPM because they are most familiar with the buildings they maintain. They are most likely to see pests, evidence of pests, or conditions conducive to pests. With training, custodians can become instrumental in the success of the IPM program, because many pest problems are prevented or reduced through practices inside and outside the building.

5. The School's Maintenance Staff/Physical Plant Manager. Staff (or outside contractors) in charge of facility maintenance and repair, landscaping design and maintenance, HVAC services, electrical services, plumbing, and roofing can play significant roles in IPM programs because they are aware of building defects that might allow pests to enter.

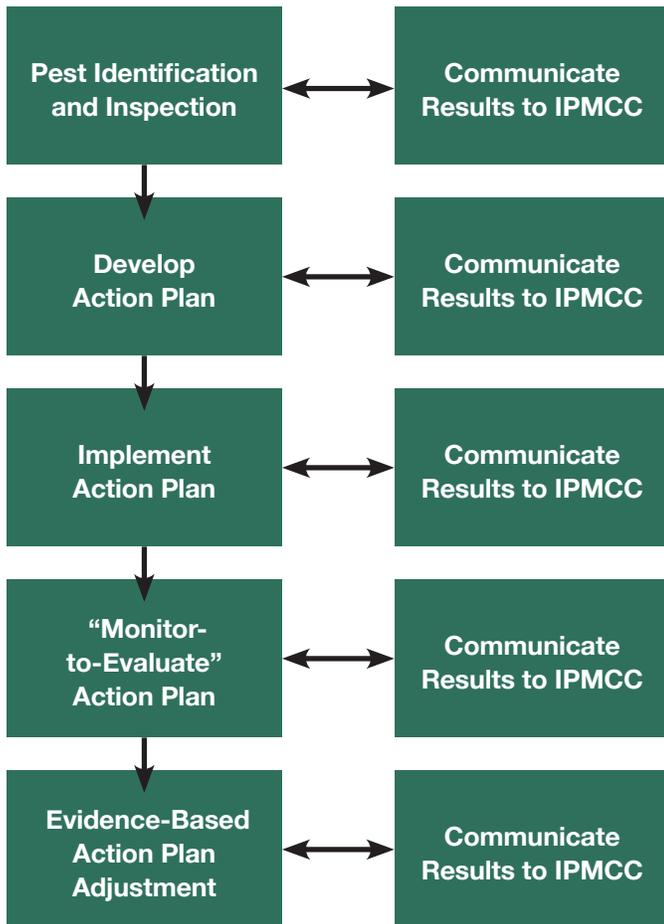
6. A Top Level School Administrator. Administrators and decision makers should understand the legal consequences of improper pesticide use, pesticide safety issues, and decision making about pesticides and their appropriate use in schools, as well as health issues related to pests such as rodents, cockroaches, flies, and stinging pests.

Record Keeping is Critically Important. Information, acquired through a detailed, thorough, and consistent inspection process is the fuel that drives the IPM decision-making process. Thus, the most important activity that both the PMP and the school can engage in is accurate, on-going record keeping. For the school it's important to keep a simple log of pest sightings, including when and where pests are seen. The size of the school and number of buildings will help determine how many pest sighting logbooks should be maintained. Logbooks should be placed in central location(s) and teachers, school administrators, and staff instructed about what the logbooks are for and how to make an entry. Logbooks can be placed in common areas such as the main office, teacher's lounge, and cafeteria.

Examples of other records that should be kept include the following:

- Inspection reports
- IPM work orders
- Pesticide labels and Safety Data Sheet (SDS) documents for all pesticides and other pest control products used on facility grounds

Flow Chart. Management of pests in schools begins with a thorough inspection and then follows a logical series of steps aimed at eliminating and preventing pests. The results at every step **MUST** be communicated to an IPM Communication Committee (IPMCC).



INTEGRATED PEST MANAGEMENT (IPM)

Management of pests in schools is best accomplished by coordinated implementation of a variety of interventions. Their integration is often referred to as Integrated Pest Management (IPM). IPM is a seamless, on-going process and should never be considered a series of unrelated events. PMPs must adhere to a problem-solving mindset. An IPM mindset requires an approach that is not unlike a police detective interpreting and using evidence found at a crime scene in order to solve a mystery. To remedy an existing pest problem, the PMP must expose clues that can be used to identify and explain a pest's presence, and then design an action plan to rid the premises of the pest over the short-term and prevent their occurrence over the long-term.

The solution(s) to preventing or solving an existing pest infestation should be accomplished using any and all approved pest management tactics, including pesticides and, when appropriate, taking no action. Although pesticides may play a role in managing pests, other options must be considered when and where they are appropriate. The primary challenge to the PMP is to design an action plan that is a pragmatic balance among all available tactics.

At its core the foundation blocks of IPM are: (1) inspection, (2) pest identification, (3) action plan development and deployment, (4) re-evaluation of the action plan's success, (5) communication of each component and education of staff, and (6) monitoring and adjustment. The IPM mindset is not complicated—it simply demands that action always be information-based and that consistent lines of communication be established between the provider and the consumer of the service. In a school environment, it is imperative that the provider and consumer of pest management services communicate. **In a school environment, communication is arguably the most important of the six components.**

1. Inspection. Because the development of a pest management action plan is derived from the information gathered during the inspection process (including the information found in logbooks), inspections are a critical component of any pest management program. The information gathered during an inspection is the fuel that drives the pest management process. The goal of inspection is to collect bits and pieces of information that can be used to: (1) determine the pest's identity, if it is not already known; (2) provide a likely explanation for the pest's presence; and (3) determine the extent and origin of the infestation.

Pest populations are limited by access to water, harborage, food, and favorable temperatures. In nature, animals are not distributed randomly. Their distribution is concentrated in areas where conditions favor their reproduction and survival. All insect populations are limited by the availability of water, harborage, food, and favorable temperatures. Pest problems are most often the result of conditions that are conducive to pest survival and reproduction. A component of all pest management programs should be to limit these factors as much as economically and practically feasible.

a. Harborage. Few organisms live in an unprotected environment. Most require some form of protected home site, referred to as harborage, where they spend the majority of their time when not looking for food or a mate. Insects congregate and live in these areas because they provide conditions that are favorable for both survival and reproduction. Inside structures, clutter creates harborage. Clutter can be defined as persistent, excessive piles of clothing, books, paper bags, boxes, papers and newspapers, recyclables, etc. An emphasis in any long-term pest management program should be to minimize available pest harborage inside and outside structures. Indoors, the accumulation of clutter should be avoided.

b. Food and Water. Generally, insect pests found in and around structures can survive longer periods without food than without water. And since the quantity of food required by individual pests is not great, attempting to limit pest populations by limiting food availability is challenging, but simple concepts of sanitation must be adhered to. Fortunately, within structures food resources and their availability to pests can be minimized through proper sanitation.



Utility access points along a building foundation are locations where pests commonly enter structures. Excessive accumulations of water should be avoided.

c. Temperature. Biological systems development is more rapid at higher temperatures. Thus, pests seek out and harbor in those areas where the average temperature is higher, if not at least more stable, than the surrounding ambient temperature. In kitchens, for instance, German cockroaches are commonly found in areas where motors produce heat. The rate of insect development is directly related to temperature. Generally, as temperatures increase insect behaviors (general movement, food consumption including response to baits, mating) and metabolism are heightened.

Fall is Prime Activity Period for Pests. The fall of the year is often a very active time for insect populations. For many pests, their populations are peaking from months of growth. This is particularly true for some ant and wasp species. Argentine ant, yellow jacket, and paper wasp colonies, for instance, begin colony activity and growth in the spring, grow throughout the warm months, and reach peak colony size in late summer and early fall, just about the time the new school year starts. Many pests mate and lay eggs in mid-summer to early fall, and their immature stages overwinter and do not emerge until the following spring and summer, when the process begins again. When mating, many of these pest populations congregate in large numbers for short periods (days to weeks) of time. School grounds employees should be aware of this. In winter, warm-blooded animals, such as rats and mice, seek out warm, secluded locations indoors.



Stinging insect pests include yellow jackets and paper wasps, left to right.

2. Pest Identification. Pest identification is a necessity early in the development of a pest management action plan. Accurate identifications are important because they lead to specific information about the pest's biology. By knowing a pest's biological tendencies, one should know when and to what control practices it is most vulnerable. Management and prevention of any pest infestation is best accomplished by implementing an action plan that relies upon exploiting the weak links in an accurately identified pest's biology. This can only be accomplished if the pest has been properly identified. If a pest cannot be identified, seek help from local county extension agents by calling 1-800-ASK-UGA1. Georgia county extension agents have access to all the resources and experts at the University of Georgia and, by extension, experts at other State Land Grant Universities throughout the U.S.



Small flies are common indoor pests and proper identification is important. Pictured from left, humpbacked fly, drain fly and fruit fly.

3. The Action Plan: Development and Deployment. A pest management action plan is essentially a strategy, composed of one or more individual tactics, designed to solve or prevent a pest infestation. During the development of an action plan, one should always consider the various materials, methods, and actions that might immediately solve and permanently suppress or prevent a pest problem.

Action plans should always be knowledge-based. Their development implies a consideration and analysis of information upon which to justify the plan's action(s). Before the development of any pest management action plan, a thorough inspection of the outdoor and/or indoor premises should be conducted. The information acquired during the inspection should be used to make problem solving decisions that consider and give equal weight to all potential pest management options, including the use of pesticides, education, sanitation, exclusion and when appropriate, taking no action. Action plans are situation-specific, and will vary by pest species and local conditions at the time of the problem. Regardless of the situation, an IPM mindset dictates the tactics which make up the action plan be logical reactions to the information gathered during the inspection.

Although there are a number of tactics available for managing and/or preventing pest infestations, rarely will any one option alone be completely or permanently effective. An integrated approach that uses several types of interventions is usually best suited for the long-term management of pests. No single option should automatically be favored over the other. The conditions on hand should dictate the tactics, tools, products, and methods that might be utilized. There are no templates for the management of pests in the urban environment because each particular case is unique.

Even though pesticide treatments may play a role in solving a pest problem in the urban environment, their use should never be deemed automatic. Some pest infestations can be solved without the use of a pesticide. In some cases, pesticide use will be completely ineffective, while in other cases the use of pesticides will be the only and/or best option available. In many cases, however, a strategy which encompasses a combination of pesticides and other approaches can best achieve a long term, permanent reduction in a pest's population.

a. Pesticides are Often Implemented to Remedy Existing Pest Problems. Direct interventions are defined by the use of pesticides, usually insecticides, to solve or remedy an existing pest problem. Direct interventions are usually reactive in nature, as opposed to indirect interventions which are typically proactive in nature. When pesticide use is deemed necessary, it is the applicator's responsibility to choose the most appropriate formulation for the situation and to apply the product in a manner that assures it is encountered only by the target organism. Users of pesticide products **MUST** always read and follow the Directions for Use on the product's label.

b. Pest Management Tactics are often Implemented to Prevent Future Pest Problems. Pest management practices aimed at long-term solutions are usually preventive, pro-active measures and include proper sanitation, habitat alteration, exclusion, construction alterations, physical removal, and appropriate water and plant management and maintenance. The implementation of interventions aimed at long-term pest population suppression requires addressing/managing factors that target the pest's biology and life habits. In essence, one must know the vulnerable or weak links in the pest's natural history so that these traits can be used against the pest.



German cockroaches are common pests found in kitchens.

The goal of **habitat alteration** is to make the structure and surrounding environment less desirable to pest populations. The goals are similar to those outlined in the section above on sanitation. Because many insects are attracted to light, outdoor lighting via use of motion detection can keep insects from accumulating and entering structures, while the strategic placement of exterior lights away from doors and windows, while still illuminating them, can keep insects away from these potential routes of entry. Altering the type, position and timing of lights on the outside of buildings can make the structure less attractive to insects and the predators (e.g., spiders, ground beetles, etc.) that feed on them. Yellow light is at the upper limit of sensitivity of most insect eyes but can provide sufficient illumination for human sight. Simply changing the bulbs used for exterior illumination can be an effective alternative to using white light in areas where insect activity should be minimized. Numerous studies published in peer-reviewed research journals have concluded that ultrasonic pest control devices neither repel or kill target pests, and are therefore completely ineffective.

Recommendations on how to **exclude** pests often result in a laundry list of how to modify the habitat, including **construction alterations**. Recommendations about how to exclude pests only comes from very thorough inspections of the premises, and are best achieved by a walk-through with the PMP and a facilities manager at the school. During the inspections, the inspectors are looking for and documenting possible points of pest entry, both indoors and on the exterior of the building. These points are sometimes building deficiencies that may require physical alteration to the structure. Once potential entry points are identified, the PMP and facilities personnel must work together to ensure that these potential entry points are fixed.

PHOTO CREDIT: JANET HURLEY, BUGWOOD.ORG



PHOTO CREDIT: J. CASTNER, UNIV. OF FLORIDA



Rats and mice are common vertebrate pests. Rub-marks (the dark stain on the white bricks) are a sign of rat activity while the smaller house mouse more often nest inside buildings.

Proper Sanitation is a very important IPM intervention because implementing that one tactic will remove food sources for a wide variety of pests. It is defined as the removal or destruction of those factors, mainly easily accessible food and harborage, which allow pest populations to flourish. Sanitation makes the environment less favorable to pest survival and reproduction because it reduces those factors which are limiting to pest population growth. It targets future pest buildup, but is rarely, by itself, a remedy to existing pest problems. The practice of proper sanitation demands that potential and existing pest harborage sites be eliminated, especially those close to doors, windows, and other potential routes of pest entry into buildings and that scrap or excess food be handled appropriately so as to keep it from becoming a food source for insects.

PHOTO CREDIT: SHUTTER STOCK



Sealing entry points on roofs is a tactic proven to reduce indoor problems with many vertebrate pests including bats, squirrels, and rats.

To minimize pest invasion of interior spaces, structures can be made difficult to penetrate by installing doorsweeps on all exterior doors and by making sure that doors and windows are well-sealed when closed. Many crawling invertebrates crawl along an interface where a vertical wall meets a horizontal surface, such as along exterior walls. When they reach an opening, such as a void under a door, they naturally enter. Doorsweeps may prevent the occurrence of accidental entry.



The gap under doors is a common pest entry point that can be easily sealed by installing doorsweeps.

Pests can be **physically removed** with the use of vacuums, brooms, or sweepers. Specially-made vacuums, equipped with proper filters (HEPA filters), can be used to capture and kill German cockroaches and spiders, while a simple broom or sweeper can be used to remove cobwebs from eaves. Sticky substances (sticky traps, sticky fly paper, and various glues) can be used to create a barrier that cannot be crossed by crawling arthropods.

Cracks, crevices, and other potential pest entry points may be caulked and/or stuffed with wire mesh. Gutters should be kept free of leaves, while fascia boards and eaves should be caulked or otherwise well-maintained to exclude intrusion of water, leaves and other debris. Attics should be well-ventilated.

c. No Action. Although counter intuitive, no action should be taken in situations where inspection and analysis deem an intervention economically unrealistic or impractical in light of a specific set of circumstances that might instead be resolved by education and communication. Under certain circumstances, waiting out a pest problem may be the only and/or best option of all those considered.

4. Re-Evaluation of the Action Plan's Success. Following pest management action, PMPs should commit to maintaining some level of continuous involvement through on-going re-inspections or through some alternative form of feedback. The continuous flow of information provided by a monitoring program is essential to the success of an IPM program because it allows the PMP to adjust previous action(s), as needed, by making information-based decisions.

The information gathered during a pest monitoring program can be collected in a variety of ways, including the conventional deployment and monitoring of traps, visual inspections, the use of pest sighting logs maintained by the school, or simple follow-up phone calls after services are provided. Regardless of the method used, the monitoring phase of any pest management program is essentially a commitment to maintain a certain level of involvement in an account after an attempt to solve a pest problem.

Traps. Trapping pests is a particularly attractive means of pest removal. Various devices used to trap both crawling and flying insects have been developed for a number of species found in the indoor and outdoor urban environment. Traps typically consist of an attractant and a means of capturing or killing the attracted insect. Common attractants used in insect traps include sex pheromones, aggregation pheromones, volatile food attractants, and light. Target species include German cockroaches, yellow jackets, myriad stored product pests, house flies, fruit flies, Japanese beetles, and mosquitoes.



PHOTO CREDIT: GARY ALPERT, BUGWOOD.ORG

Monitoring pest populations often involves the use of traps that use glue boards. Proper placement and timely inspections are important when using traps.

The number of insects captured with insect traps can be impressive. However, removal trapping cannot solve most pest problems and other corrective interventions are usually required to reduce pest numbers to tolerable levels.

Insect traps should be viewed as monitoring tools, and not as instruments of control. Traps should be used to determine the presence or absence of a particular pest and the origin and severity of an infestation in the immediate area surrounding the trap. For instance, pheromone-based sticky traps are sometimes placed throughout infested kitchens in order to locate focal points of German cockroach activity. Because German cockroaches usually do not travel far from their harborage sites, those traps that consistently catch the greatest number of cockroaches locate, with good accuracy, areas where one should focus bait placement or other management efforts. This same approach is sometimes used to pinpoint stored product pests in food warehouses, food manufacturing facilities, and other places where susceptible food items are prepared or stored.

Attractive and non-attractive lighting can be used to alter an insect's behavior to the benefit of the pest manager. Although the position and wavelength of lights may make the environment less attractive to insects, light can also be used in a manner known as "attract-and-kill", where purposefully attractive lights can be used with the sole purpose of attracting and killing by electrocution or by capture on a sticky surface. Attract-and-kill insect light traps have been well-developed for various fly species, especially house flies and related species. Lights can be strategically-placed indoors in areas where fly problems persist (e.g., around food bars). Indoors, should flying insects enter from outside or emerge from a breeding source indoors, insect light traps can be placed so as to draw insects away from areas where their presence is problematic (dining areas, food bars, etc.). Indoor light traps should never be placed where they can be seen by insects from the outside. Vinegar and fruit fly traps are small, and can be discreetly placed around food bars to attract and kill flies.

School administrators and other personnel are cautioned to not penalize PMPs when deployed traps catch insects. It may be tempting to want to penalize a PMP's pest management program when traps catch target insects. The information generated by trap catch helps not only to pinpoint areas of greatest pest activity so that control tactics can be concentrated there, but a commitment to long term trapping programs also helps to evaluate the effectiveness of the action plan(s).

5. Communication of each Component and Education of Staff when required. Since IPM programs are based on knowledge (from inspection), a natural outcome of a well-designed action plan is often a reduction in pesticide use brought about by non-chemical and low-impact remedies to existing pest problems. Because property owners are sometimes apprehensive about pesticide use in and around their environment, there is clear impetus for PMPs to reduce their use.

6. Monitor and Adjust when Necessary. Following the development and implementation of a well-designed action plan the situation should be continuously monitored, re-evaluated, and the action plan re-adjusted as needed. Monitoring can be as simple as noting if/when pests are seen after action is taken, or as complicated as using, for example, sticky traps to record locations and numbers of pests before and after some control action.

Although it may appear overwhelming, the urban IPM mindset outlined above is simpler than one might expect. There are no hard and fast rules surrounding the steps. The most important aspect of changing one's thinking about pest management is to realize that effective pest management programs require a mindset aimed at reducing/eliminating those factors that create and sustain pest populations. In most cases, pest identification, inspection, and action plan development occur simultaneously, usually during the same, and first, visit. Most PMPs know what they are going to do almost immediately. However, no decisions should be made until a complete inspection has been made and enough pertinent information has been gathered to make logical decisions. The action plan is formed during the inspection.

Managing insect pest populations in and around schools requires effort. There are no quick fixes. The most effective management programs involve a mindset aimed at finding the 'weak link' in the biology of the particular pest involved and, armed with that knowledge, designing a series of actions aimed at exploiting that weak link to solve the problem.

Engaging in the IPM process is often simpler than one might expect. The steps involving monitoring can be as simple as noting if/when you see the pest after enacting your action plan or as complicated as placing sticky traps to record locations and numbers of pests before and after performing some, often simple, action (e.g., keeping garbage in a tightly sealed container or redirecting the spray of the irrigation system sprinkler heads in the landscape). The mindset is the important concept to recognize in addition to the overwhelming importance of the first two steps. The amount of energy expended in planning and enacting an action plan is contingent upon knowing the pest involved and understanding their life support requirements so that appropriate actions can be planned. Those actions and the steps that follow will vary by the pest and local conditions as dictated by the information gleaned from the first several inspections and actions—there are no hard and fast rules surrounding IPM, just a mindset aimed at reducing/eliminating those factors involved in creating and sustaining a pest population that is "out-of-control."

Chapter 3

Selecting IPM Services for Georgia Schools and Child Care Facilities

The process of IPM is a way for achieving environmentally sound pest prevention and suppression that involves all school personnel employing a variety of interventions while ensuring accountability through communication and record keeping.

The decision to contract professionals or perform IPM as an “in-house” service should involve consideration of the costs and benefits associated with either choice. Schools and child care facilities in Georgia must know that any in-house personnel who apply ANY pesticide on their property should be trained or credentialed in pesticide safety. Any contractor should likewise be licensed and preferably trained in IPM. In-house personnel that apply pesticides should at the very least attend a pesticide safety course, such as the GCAPP certification outlined in Chapter 1. The license status of any contractor can be verified at www.agr.georgia.gov.

Pest management responsibilities are often divided into separate jurisdictions within a district or school. Turf and ornamental pest control is separate from the indoor environment, which is often further segregated into food handling and classrooms. The multitude of options and decisions required for the success of an IPM program (Chapter 2) begs that one person, or committee per district or school be assigned the responsibility of oversight (action plan approval, coordination of staff participation) for all IPM efforts.

CONTRACTING AN IPM SERVICE PROVIDER

A pest management professional that is an IPM practitioner will provide effective pest management tailored to the pest and conditions at the school. A PMP practicing IPM will recommend sanitation, exclusion, and habitat modifications that school personnel can implement to mitigate pest problems while judiciously applying pesticides in a program that targets a specific pest.

The process of selecting a PMP should involve:

- Contacting several licensed companies and inquiring if they offer IPM services.
- Obtaining a list of the components of the IPM services offered by each company.
- Getting and checking references from the list of IPM customers for each company.
- Asking for a copy of the company IPM contract and determining the level of dedication to accountability for each company by comparing the number and quality of Service reports and IPM recommendations outlined in the contract.

Bids should not be accepted from companies that do not conduct an on-site inspection of all facilities included in the contract prior to submitting their bid.

PEST MANAGEMENT BID SPECIFICATIONS

The selection of an IPM contractor should not be based on the lowest bid; quality service is extremely important.

IPM bid specifications should include:

- A valid license under any of the GDA certification categories for the type(s) of service required by the bid;
- A current insurance policy covering pest control activities;
- A list of all facilities and properties covered by the contract as well as a map showing their locations across the school district;
- A list of pests included and excluded from the IPM service contract;
- The requirement to provide a copy of an **IPM Plan** for all facilities.

An IPM Plan should include:

- The names and contact information for all school personnel within the appropriate department designated as responsible for coordination and cooperation with the IPM program, as well as the primary and secondary 24-hour contacts for information concerning any aspect of the IPM program for both the contractor and the school;
- Frequency of facility inspections;
- Frequency of **reports** as well as the contacts and routing of the inspection reports and informational material.

Reports should include:

- Identification of pests documented by the monitoring program, reported by staff and students, or sighted at the time of inspection;
- Location of identified pest harborage(s) and conditions favorable to pests;
- An **Action Plan** that displays an understanding of the biology and behavior the identified pest.

Action Plans should include:

A list of all actions intended and taken, to address a specific pest issue such as:

- Suggestions for interventions including structural and procedural changes to reduce the availability of food, water, and shelter to pests;
- A preference for targeted, judicious – rather than scheduled – application of appropriate pesticides;
- The amounts, product name, and placement of any pesticide applied as listed on a Pesticide Use Record.

Chapter 4

Sample Forms

I. SAMPLE CONTRACT FOR STRUCTURAL PEST CONTROL SERVICES

This is a model contract. It is intended to provide guidance on what can be included in an IPM contract, and can be altered to meet the specific needs of school districts.

(ENTER SCHOOL DISTRICT NAME) Integrated Pest Management Service Agreement

This Integrated Pest Management Service Agreement (“Agreement”) is entered effective (ENTER DATE) by and between (ENTER CONTRACTOR NAME) (“Contractor”) and (ENTER SCHOOL DISTRICT NAME).

The Contractor is to provide consulting and management services to the school district in accordance with this Agreement and all attached Schedules, in conformance with the Request for Integrated Pest Management, (ENTER DATE), which is incorporated into this Agreement by reference herein.

(ENTER SCHOOL DISTRICT NAME) wishes to retain the Contractor to provide Integrated Pest Management (IPM) services at identified school facilities. The Contractor’s work is intended to implement and support the following school districts’ objectives:

- Sustain a safe, healthy school environment for students, staff, and others.
- Protect against any significant threat to public safety.
- Prevent loss of or damage to school structures or property.

The parties therefore agree as follows:

Scope of Services

The Contractor shall provide to (ENTER SCHOOL NAME) the specified services with respect to the specifications set forth on Schedule A: IPM Contract Specifications, Schedule B: IPM Program Specifications, and Schedule C: RFP Proposal Price Form attached hereto (the “Services”). Should (ENTER SCHOOL NAME) desire the Contractor to perform additional services, Schedules A, B, and C shall be modified, signed by both parties, and attached to this Agreement. The terms of any signed Schedules A, B and C and any amendments or supplements thereto are hereby incorporated by reference herein in their entirety, and the specific terms of the most recently signed Schedules A, B, and C shall control if such terms differ from the terms of this Agreement. All work done under this Agreement will be done in accordance with applicable state, federal and local laws, rules, regulations and

District policies. Georgia pest management companies are licensed and regulated by the Georgia Department of Agriculture, 19 Martin Luther King, Jr. Drive, Atlanta, Georgia 30334, (404) 656-3641.

Fees

(ENTER SCHOOL NAME) shall pay the fees for the Services as set forth on Schedule C. Fees shall be invoiced on a monthly basis, and shall be due and payable net thirty (30) days from the date of invoice.

Contractor Employment Status

The parties intend that this Agreement create an independent contractor relationship between the Contractor and (ENTER SCHOOL NAME). (ENTER SCHOOL NAME) is interested only in the end results achieved by the Services of the Contractor and that they conform to the requirements specified in this Agreement. The manner of achieving those results and the right to exercise control or direction as to the details, means and method by which the Services are completed is the responsibility of the Contractor except to the extent provided for in this Agreement.

Startup and Term

This Agreement shall be effective upon the execution of the Agreement and its performance shall begin on (ENTER DATE), and shall continue for a 12-month period ending (ENTER DATE). After the initial term of one year, (ENTER SCHOOL NAME), at its option, may extend this Agreement for (ENTER NUMBER) successive one-year periods to (ENTER DATE), or (ENTER DATE), by notifying the Contractor at least ninety (90) days prior to the then current term. (ENTER SCHOOL NAME) extends this Agreement, the same terms, conditions, and method of payment shall apply during the extension period unless otherwise modified by both parties.

Notices

Notices as provided for in this Agreement shall be delivered or mailed as herein provided.

CONTRACTOR:

ENTER NAME AND ADDRESS

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the date set forth in the Preamble above.

CONTRACTOR:

By: _____

(ENTER NAME), President

Date: _____

SCHOOL NAME:

PLACE CONTACT INFORMATION AND SCHOOL ADDRESS HERE

SCHOOL DISTRICT:

By: _____

Name & Title

Date: _____

SCHEDULE A: IPM CONTRACT SPECIFICATIONS

Scope of Service

The Contractor shall furnish all supervision, labor, materials, and equipment necessary to accomplish the monitoring, management and pest removal components of the IPM program. The Contractor shall also provide written site-specific recommendations for structural and procedural modifications to aid in pest prevention. The primary service provided by the Contractor is the Contractor's knowledge about pests and their management. The Service provided will include annual inspection reports of all facilities, pest monitoring reports on a (ENTER TIMEFRAME) basis, proper identification and management of pests consistent with IPM principles, and recommendations on housekeeping, structural or landscape renovations/ procedures/ maintenance to prevent future pest infestations.

This specification is part of a comprehensive Integrated Pest Management (IPM) program for the District listed herein. IPM is a process for achieving long-term, environmentally sound pest suppression through the use of a variety of management practices, including structural and procedural modifications that reduce pest access, food, moisture and harborage. Interventions involving pesticides are applied only on an "as needed" basis. Need is determined by pest population monitoring and previous unsuccessful attempts to solve the pest problem using interventions without pesticides.

The Contractor shall adequately suppress the following pests (MODIFY the following list AS APPROPRIATE)

- Indoor populations of rodents, insects, arachnids, and other arthropod pests not specifically excluded from the contract.

- Outdoor populations of potentially indoor-infesting species that are within the school property.
- Nests of stinging insects within the property boundaries of the specified buildings.
- Individuals of all excluded pest populations that are incidental invaders inside the specific buildings, including winged termites emerging indoors.

The following pests are excluded from this contract: (MODIFY the following list AS APPROPRIATE)

- Birds, bats, snakes, and all other vertebrates other than commensal rodents.
- Subterranean termites and other wood destroying organisms.
- Mosquitoes.
- Plant-feeding pests.

Management of pests excluded from the specifications may be requested as an additional service, not included within the scope of this IPM contract.

District Facilities

The contract for pest management includes all school district sites and facilities listed in Table 1 and immediate perimeter of buildings. At certain school district sites, playground areas may be included within the Agreement scope in the event of a pest outbreak that requires immediate attention. Any pesticide application occurring greater than ten (10) feet beyond the building perimeter shall include posting as required by State regulation.

*** Below is a table to assist you in determining the level of pest control for each school campus and building.

Table 1 All School Building and Campuses To Be Covered Under Pest Control Service Summary

	School	Location	Square Feet (s.f.)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
	TOTAL		TOTAL SQUARE FEET

District Contact Person

The District contact for all pest management communications and decisions is the Integrated Pest Management (IPM) Coordinator, (ENTER IPM COORDINATOR'S NAME). Individual buildings may have an assigned liaison; if that is the case the IPM Coordinator will provide the Contractor with a listing of these personnel.

Pesticide Applications

The Contractor will furnish the District IPM Coordinator with pesticide application use records after each site visit, in accordance with all Georgia and federal laws.

Term of Contract and Compensation

The Contractor shall furnish all supervision, labor, materials, and equipment necessary to complete this contract for an initial one-year period and all pricing must remain firm for the duration of the initial contract period. The Contractor will furnish the District IPM Coordinator with pesticide application use records after each site visit. These should be separate from invoicing, pesticide labels and SDS sheets.

The Contractor shall provide billing statements to the District with all labor, materials, and pesticide costs itemized for each school district site. Any extra costs for add-on services must be itemized in a like manner. If funds are not appropriated or otherwise made available to support continuation in any fiscal year succeeding the first fiscal year, the District shall have the right to terminate this contract and the Contractor is not entitled to recover any costs not incurred prior to termination.

Price Adjustments

Additional school district sites and facilities may be added or deleted at any time throughout the life of the Agreement. The Contractor shall be required to provide service to any additional sites and facilities subject to all conditions identified herein. The contract price schedule shall be adjusted to reflect changes in the number and square footage of sites and facilities serviced as service levels vary.

Additional Services

From time to time the Contractor may be asked to perform extra services not specified within this scope of work. This work will be reimbursed by the District under a separate purchase order. The Contractor shall submit a quote for extra services and be prepared to begin the necessary work within one (1) working day of receipt of the request. This type of work may also be competitively bid at the District's discretion.

Emergency Service

Special or emergency service shall be requested by the IPM Coordinator in exceptional circumstances. The Contractor shall be prepared to respond to such a non-scheduled request within four (4) working hours (Monday-Friday) of receipt of the request.

Termination for Default

Throughout the term of this Agreement, the District may conduct inspections of the sites and facilities covered to determine the effectiveness of the IPM program and Contractor compliance with the Agreement. The IPM Coordinator will document in writing the results of the inspection and provide the Contractor a copy. The Contractor shall promptly initiate actions to correct all deficiencies found. If deficiencies are not being satisfactorily corrected, the District may, by written notice to the Contractor, terminate this contract. In such event, the District may take over the work and prosecute it to completion, by contract or otherwise.

In the event either party shall be prevented from performing its obligations hereunder due to governmental or administrative prohibitions, acts of God, acts of public enemy, riot, accidents, breakdown of equipment, weather conditions, delivery interruptions, or other causes beyond such party's control, the party so prevented shall, upon notice to the other party, be thereafter released from its obligations so long as such causes shall continue.

Termination for Convenience

The performance of work under this Agreement may be terminated by the District in accordance with this clause in whole, or from time to time in part, whenever the District shall determine that such termination is in the best interest of the District. Written notice shall be given at least (30) days in advance. The District will pay for all labor and material in accordance with Bid Price up to the date of the termination. However, the Contractor shall not be reimbursed for termination expenses or for any anticipatory profits which have not been earned up to the date of the termination.

Insurance Requirements

The Contractor shall purchase and maintain insurance standards set forth by the Georgia Structural Pest Control Act. This insurance must protect the district from claims which may arise out of or result from the Contractor's operations under the Agreement, whether such operations be by it or by any subcontractor, lower tier contractor or by anyone directly or indirectly employed. A Certificate of insurance is required to be submitted to the District verifying that the contractor maintains Comprehensive General Liability, Comprehensive Automobile Liability, and Worker's Compensation, in the minimum amount required by state law, ten (10) days after award of bid or prior to commencement of work, whichever occurs first. This requested certificate of insurance shall have the District named as an additional insured party for general liability, automobile, and workers' compensation.

At the time of the issuance of any contract for treatment or service, a statement shall appear in the contract, in the same size type as other terms and conditions, stating the following: The Georgia Structural Pest Control Act requires all pest control companies to maintain insurance coverage. Information about this coverage is available from this pest control company.

Indemnification

The Contractor shall reimburse, indemnify and hold harmless the District for all loss resulting from the negligence of the Contractor in the performance of this Agreement, and for all loss to the District resulting from the non-performance thereof, except those losses other-wise specifically excluded by the District.

Environment and Safety Issues

The Contractor shall observe all safety precautions throughout the performance of this Agreement. All work shall be in strict accordance with all applicable Federal, state, and local health and safety requirements. Where there is a conflict between applicable regulations, the most stringent will apply. The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work. The Contractor shall be responsible for any citations(s) received for non-compliance with regulations/standards relating to any failure of performance/non-performance of Contractor employees. Lack of knowledge of the Contractor shall in no way be a cause for relief from responsibility or constitute a cognizable defense against the legal effects thereof.

Non-Discrimination in Employment

The District actively subscribes to a policy of equal employment opportunity and will not discriminate against any employee or applicant because of race, color, religion, sex, national origin, sexual orientation, age, disability, protected veteran status, or any other characteristic protected by law. Because the Contractor provides consulting and management services to the District, the Contractor shall not discriminate in any manner against any employee or applicant for employment because of race, color, religion, sex, national origin, sexual orientation, age, disability, protected veteran status, or any other characteristic protected by law.

Tobacco Free and Alcohol/Drug Free Environment

The District maintains a tobacco, alcohol/drug free environment. The sale or use of tobacco, alcohol or drugs, in any form, or related product, is prohibited in school buildings and on school property at all times. Persons found violating this policy will be requested to remove the product and themselves from school premises.

CONTRACTOR:

ENTER NAME AND ADDRESS

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the date set forth in the Preamble above.

CONTRACTOR:

By: _____

(ENTER NAME), President

Date: _____

SCHOOL NAME:

PLACE CONTACT INFORMATION AND SCHOOL ADDRESS HERE

SCHOOL DISTRICT:

By: _____

Name & Title

Date: _____

SCHEDULE B: IPM PROGRAM SPECIFICATIONS

General Information

The Contractor shall furnish all supervision, labor, materials, and equipment necessary to accomplish the monitoring, management and pest removal components of the pest program. The Contractor shall also provide written site-specific recommendations for structural and procedural modifications to aid in pest prevention. The primary service provided by the Contractor is the Contractor's knowledge about pests and their management. The service provided will include detailed annual inspection reports of all facilities, pest monitoring on a (ADD TIMEFRAME) basis, proper identification and management of pests consistent with IPM principles, and recommendations housekeeping, structural or landscape renovations/ procedures/ maintenance to prevent future pest infestations.

This specification is part of a comprehensive Integrated Pest Management (IPM) program for the District listed herein. IPM is a process for achieving long-term, environmentally sound pest suppression through the use of a variety of management practices, including structural and procedural modifications that reduce pest access, food, moisture and harborage. Interventions involving pesticides are applied only on an "as needed" basis. Need is determined by pest population monitoring and previous unsuccessful attempts to solve the pest problem using interventions without pesticides.

The Contractor shall ensure that staffs assigned to this project are adequately trained in IPM techniques and that the most current IPM procedures are followed.

This Agreement for pest management includes all school district sites and facilities listed in Table 1, and immediate perimeters of buildings.

District Contact Person

The District contact for all pest management communications and decisions is the Integrated Pest Management (IPM) Coordinator, (ENTER IPM COORDINATOR'S NAME). Individual buildings may have an assigned liaison; if that is the case the IPM Coordinator will provide the Contractor with a listing of these personnel.

Pest Management Plans

The Contractor shall prepare a Pest Management Action Plan for the District, with individual site plans for each school district facility. The action plan shall be submitted within two (2) weeks of contract award and inspections of all facilities shall be completed within thirty (30) days. The Contractor shall make (ADD TIMEFRAME) inspections of each school district site and facility to evaluate the pest management program and provide an annual report summarizing all recommendations, interventions and outcomes. The Contractor shall update the Pest Management Action Plan on an annual basis, or as necessitated by major school renovations. The plan shall be submitted to and approved by the IPM Coordinator, and at a minimum, include the areas covered below.

Structural or operational changes: The Contractor shall describe site specific solutions for reducing pest access to food, water, and harborage using a building floor plan for reference.

Monitoring: The Contractor shall describe the products and procedures used for identification of pest presence. Any changes in the monitoring program at a particular school district building site shall be communicated and agreed to by the IPM Coordinator.

Materials and Equipment: The Contractor shall provide current labels and Safety Data Sheets (SDS) for all pesticide products used in the IPM program. In addition, brand names shall be provided for all application equipment and any pest management equipment used to provide the IPM service.

Service Schedule: The Contractor shall provide service schedules that include the frequency of Contractor visits. The schedule must minimize the disruption of building activities and be pre-approved by the IPM Coordinator and passed on to the appropriate building liaison. The Contractor must check in with the building liaison to register the date, purpose of visit, activities performed, and duration of visit. When it is necessary to perform work outside of the regularly scheduled service time, the Contractor shall notify the IPM Coordinator at least two (2) day in advance.

Commercial pesticide applicator certificates or licenses: The Contractor shall provide copies of the company pest control license and dated pesticide applicator certificates for every employee who will be performing on-site services under this contract.

Records and Documentation

The Contractor shall be responsible for maintaining a pest control logbook for each school district site and facility specified in this Agreement. These records shall be kept onsite in the Principal or Kitchen Manager's office and maintained on each visit by the Contractor. The logbook shall contain the following:

Pest Management Plan: A copy of the District Pest Management Plan and specific site work plan, including all labels, SDSs, pesticide applicator certificates for Contractor personnel and the service schedule.

Forms: Documentation of findings and pest control activities to include the following:

Pest Sighting Forms: The building IPM liaison will maintain pest sighting forms. All occupants will report pest sightings to this individual for documentation which will include date, time, location and tentatively identified pest species. This information will be made available to the Contractor during scheduled inspections. It is the Contractors responsibility to verify pest species prior to recommending any treatment procedures.

Site Visit Log: The Contractor will log the date, purpose of visit, action taken, follow-up required and duration of visit for each site visit. Special note of emergency or special services must be recorded.

Inspection Form: Inspection activities will be documented on standard inspection forms and maintained in the logbook.

Monitoring Log Sheet: All observations from pest monitoring activities will be recorded on the monitoring log sheet.

Pesticide Use Log Sheet: Documentation will include pesticide and coverage information. Floor plan of the area serviced for each pesticide control application may be included if necessary.

Monthly Service Reports

The Contractor shall provide monthly service reports within fifteen (15) days following the end of each month. The service reports shall include, but not be limited to, the following:

- Man-hours for routine services.

- Location, man-hours, and work description of special, emergency, and additional services.
- Identification and listing of type and quantity of pesticides and containerized baits used.
- Written statement of recommended structural and procedural modifications for District facilities.

Service Requirements

Professional Services: The services/consultation of an Entomologist or other such expert must be provided to the school system at no additional cost if the need arises.

Training and Updates: The Contractor may be asked to conduct semi-annual educational seminars for school system staff on IPM practices in order to promote understanding and assistance with the IPM program. The Contractor may be asked to attend IPM Coordinator training.

Safety and Health: The Contractor shall observe all safety precautions throughout the performance of this Agreement. All work shall be in strict accordance with all applicable Federal, state, and local health and safety requirements. Where there is a conflict between applicable regulations, the most stringent will apply. The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work.

Special Entrance: Certain areas within some buildings may require special entrance instructions. Any restrictions associated with these special areas will be explained by the IPM Coordinator. The Contractor shall adhere to these restrictions and incorporate them into the Pest Management Plan.

Uniforms and Protective Clothing: All Contractor personnel working in or around buildings specified in this Agreement shall wear distinctive uniform clothing. All Contractor personnel must possess proper identification and proof of credentials while at school sites and facilities. The Contractor shall determine the need for and provide any personal protective items required for the safe performance of work. Protective clothing, equipment, and devices shall, as a minimum, conform to U.S. Occupational Safety and Health Administration (OSHA) standards for the products used.

Vehicles: Vehicles used by the Contractor shall be identified in accordance with state and local regulations.

Use of Pesticides

The Contractor shall be responsible for application of pesticides according to the label. All pesticides used by the Contractor must be registered with the United States Environmental Protection Agency and the State of Georgia.

The Contractor shall adhere to the following rules for chemical control products:

The Contractor shall not apply any pesticide product that is not included in the Pest Management Plan or pre-approved by the IPM Coordinator. Transport, handling, and use of all pesticides shall be in strict accordance with the manufacturer's label instructions and all applicable Federal, State, and local laws and regulations.

Pesticide application shall be according to need and not by schedule. Such methods shall not be applied unless visual inspections or monitoring devices indicate the presence of pests in excess of agreed upon threshold levels in a specific area, and non-pesticide control methods have proved unsatisfactory.

Preventive pesticides in areas where there is a potential for insects and rodents will be evaluated on a case-by-case basis with the IPM Coordinator.

When the application of chemical control products is necessary, the Contractor shall employ the least hazardous materials, most precise application techniques, and the minimum quantity of pesticide necessary to achieve control. For outdoor pesticide applications the Contractor will work with the IPM Coordinator to notify the appropriate school personnel to ensure students will not be present during the application of herbicides and insecticides outdoors.

As a general rule, the Contractor shall apply all insecticides as "crack and crevice" treatments, defined in this Agreement as treatments in which the formulated insecticide is not visible to a bystander during or after the application process. Application of insecticides to exposed surfaces or as space sprays (fogging) shall be restricted to exceptional circumstances where no alternative measures are practical. The Contractor shall obtain approval from the IPM Coordinator prior to any such application. The Contractor shall take all necessary precautions to ensure tenant and employee safety, and all necessary steps to ensure the containment of the pesticide to the site of application. No pesticide is to be applied in any room or area while in use or occupied by students, with the exception of pre-approved containerized baits. The Contractor will follow all requirements on product labels including re-entry time periods.

The Contractor shall not store any pesticide product in the buildings specified in this Agreement.

Non-pesticide controls include the use of a portable vacuum for initial pest suppression and the use of indoor trapping devices. Bait formulations shall be used where appropriate. Sticky traps will be used to monitor indoor insect populations and be used to evaluate the effectiveness of efforts wherever necessary. Traps must be concealed and not readily accessible to students.

Rodent Control

Rodent control inside occupied facilities shall be accomplished with trapping devices only. Rodenticides may be used only in exceptional circumstances when deemed essential for adequate rodent control. All such devices shall be concealed and in protected areas so as not to be disturbed by school operations. The Contractor is responsible for disposing of all trapped rodents or rodent carcasses in an appropriate manner. Other treatment techniques require the submittal to the Pest Control Coordinator for review and approval.

The Contractor shall obtain approval from the IPM Coordinator prior to making any interior rodenticide treatment. All rodenticides, regardless of packaging, shall be in EPA-approved tamper-resistant bait boxes.

Outdoor bait boxes shall be placed out of general view where they will not be disturbed by school operations. The lids of the boxes shall be securely locked or fastened shut. All bait boxes shall be attached or anchored to the ground, building wall, or other immovable surface so that the box cannot be disturbed. Bait shall always be secured in the feeding chamber of the box and never placed in the runway or entryways of the box. All bait boxes shall be labeled on the inside with the Contractor's business name and address. Inspections of bait boxes shall occur at least monthly during the year.

Structural Modifications and Recommendations

The Contractor is responsible for advising the IPM Coordinator, in writing, about any structural, sanitary, or procedural modifications that will reduce pest access, food, water and harborage. The Contractor shall not be responsible for carrying out structural modifications as part of the pest control efforts, unless requested by the IPM Coordinator to help reduce a pest infestation. The Contractor shall be responsible for adequately suppressing all pests included in this Agreement until such time as the appropriate preventive measures are enacted. The District is committed to completing the necessary preventive measures in a reasonable and timely fashion.

Waste Disposal

The Contractor is responsible for all waste generated by their work on school grounds. Non-hazardous solid waste products shall be removed from the work-site and placed in dumpsters

located on school property. All non-hazardous liquid waste must be removed from school property by the Contractor. All hazardous waste materials generated by the Contractor during servicing shall be removed from the school property and disposed of in accordance with all applicable Federal, State and County Laws and Regulations. For the purpose of this contract, any waste chemical suppressant will be considered the property of the Contractor. Under no circumstance is any hazardous material to be disposed of at any location in the school system. It shall be the responsibility of the Contractor to insure the hazardous waste materials are properly packaged, labeled and transported in accordance with all applicable Federal, State and County Laws and Regulations. Costs of disposal are to be borne by the Contractor.

CONTRACTOR:

ENTER NAME AND ADDRESS

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the date set forth in the Preamble above.

CONTRACTOR:

By: _____

(ENTER NAME), President

Date: _____

SCHOOL NAME:

PLACE CONTACT INFORMATION AND SCHOOL ADDRESS HERE

SCHOOL DISTRICT:

By: _____

Name & Title

Date: _____

SCHEDULE C: IPM RFP PROPOSAL PRICE FORM

(Contractor attach price break sheet)

CONTRACTOR:

ENTER NAME AND ADDRESS

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the date set forth in the Preamble above.

CONTRACTOR:

By: _____

(ENTER NAME), President

Date: _____

SCHOOL NAME:

PLACE CONTACT INFORMATION AND SCHOOL ADDRESS HERE

SCHOOL DISTRICT:

By: _____

Name & Title

Date: _____

III. INSPECTION CHECKLISTS

FACILITY INSPECTION CHECKLIST Food Service Areas

Facility Name: _____ Date of Inspection: _____

Name of Inspector: _____ Additional comments on back of page

Food preparation and serving areas	OK	Needs work	N/A	Location	Comments
Walls – free of holes, cracks, and crevices					
Floors – in good repair, cleaned regularly					
Wall – floor junctions clean					
Drains – clean and operational					
Freezer & icemaker condensate lines free of organic debris					
Vents – screened, unobstructed					
Pipe chases sealed under sinks					
Ceilings – are tiles missing, stained, wet?					
Doors – are air curtains installed on loading doors? Operating?					
Kitchen equipment (around, underneath, clean, dry?)	OK	Needs work	N/A	Location	Comments
Stoves, hoods, fryers					
Mixers and meat slicers					
Dishwasher and tray drop off area					
Microwaves, bread warmers, toasters					
Service lines (warmer legs & underneath)					
Refrigerator/freezer areas					
Countertops, sinks, drying board, surrounding areas					
Shelves, cabinets, drawers					
Icemaker, milk coolers, freezers					
Vending machines					
Cafeteria/lunch room area	OK	Needs work	N/A	Location	Comments
Tables and chairs – legs sealed or plugged					
Tables and chairs clean (top surfaces, legs, underside)					
Floor cleaned regularly					
Utility closet well organized and clean					

FACILITY INSPECTION CHECKLIST

Food Service Areas (Continued)

Recycling and trash collection areas	OK	Needs work	N/A	Location	Comments
Recycling bins emptied and cleaned routinely					
Trash cans have liners and lids that fit tightly; area around trash cans cleaned regularly					
Delivery and storage areas	OK	Needs work	N/A	Location	Comments
Materials stored on racks 6-12" above the ground					
Areas behind storage rack are easily inspected					
Incoming supplies inspected as they arrive					
Incoming supplies dated after inspection and stock rotated					
Supplies stored on clean shelves and mobile storage carts					
Damaged, contaminated, infested packages removed promptly					
Pallets & empty packaging taken to recycle area or trash disposal promptly					

Facility Name: _____ Date of Inspection: _____

Name of Inspector: _____ Additional comments on back of page

Classrooms	OK	Needs work	N/A	Location	Comments
No pesticides stored in classroom					
Sticky traps and/or bait stations placed out of the reach of children					
No food stored improperly in desks					
Cubbies and other storage areas organized					
Pet cages clean					
No food debris on tables, floors, counters					
Pet and other food items kept in sealed containers					
Floor cleaned (vacuumed or mopped) regularly					
Edges of bulletin boards and blackboards sealed properly					
Items on walls free of signs of cockroaches					
Trash and recycling emptied daily					
Sinks dry overnight; cabinets clean; no sign of leaks					
Ceiling tiles in good condition; no signs of roof or pipe leaks					

FACILITY INSPECTION CHECKLIST

Gymnasium, Locker Rooms, Other Non-Classroom Areas

Facility Name: _____

Date of Inspection: _____

Name of Inspector: _____

Additional comments on back of page

Gymnasium/locker room	OK	Needs work	N/A	Location	Comments
Floor under bleachers or out in open cleaned regularly; no food/drink debris					
No leaks; drains free of debris					
Refreshment stands - no spilled food or beverages on floors, counters; trash removed after area is used					
Offices, Teacher Prep/Lounge	OK	Needs work	N/A	Location	Comments
Food stored in sealable containers; expired foods discarded					
Floor, tables, and counters cleaned regularly					
Microwave, toasters, coffeemakers and other appliances kept clean					
Indoor plants not watered excessively					
Custodial closets	OK	Needs work	N/A	Location	Comments
Closet kept organized					
Floor drain free of debris					
Mops hung to dry overnight					
Buckets rinsed and emptied at end of day					

FACILITY INSPECTION CHECKLIST

Exterior Areas

Facility Name: _____ Date of Inspection: _____

Name of Inspector: _____ Additional comments on back of page

Building Exterior	OK	Needs work	N/A	Location	Comments
Doors close tightly					
Windows seal tightly; screens (if used) are in good condition					
Walls and foundation areas clear of vegetation					
Utility service entrances sealed or screened					
Exterior water spigots not dripping or leaking					
Walls/roof line free of holes and cracks					
Vents (supply & exhaust) screened and unobstructed					
Exterior free from mold/mildew					
Adequate water drainage near foundation (no standing water)					
Roof in good condition and draining properly					
Gutters cleared of debris					
Dumpster and trash collection areas	OK	Needs work	N/A	Location	Comments
Dumpster doors close properly					
Dumpster drains plugged or screened					
Dumpsters placed on concrete slabs that are kept clean					
Dumpsters located adequate distance from doors					
Exterior trash cans have plastic liners and tight-fitting lids					
Surplus equipment or material not placed next to buildings					
Exterior landscaping	OK	Needs work	N/A	Location	Comments
Adequate visibility between plants and buildings					
Building free from direct contact with trees, shrubs or vines					
Building free from direct tree hazards					
Aesthetic appearance/safety features					
Fence line clear					

IV. PESTICIDE USE LOG SHEET

**STRUCTURAL PEST CONTROL
Pesticide Use Log Sheet**

IPM Coordinator: _____

School Name: _____ Address: _____

Applicator Name	Application Date and Time	Target Pest	Specific Area Treated	Pesticide Product Name	U.S. EPA Registration #	Amount of Pesticide Applied	Concentration of Pesticide	Method of Application	Post-Application Precautions

Chapter 5

Resources

The Georgia Department of Agriculture's Structural Pest Control Section manages the licensing and inspection of structural pest control companies in the state. The website allows the general public to search for licensed pest management companies, as well as review the rules and regulations for structural pest control or request an inspection of your facility.

<http://agr.georgia.gov/structural.aspx>
Telephone: (404) 656-3641
Fax: (404) 463-6671

University of Georgia Urban Pest Management Program at Griffin:
<http://www.gabugs.uga.edu/>

The Urban Pest Management Program on the University of Georgia's Griffin Campus offers multiple training opportunities for pest management professionals.

- Certified Pest Control Operators of Georgia:
<http://www.cpcoofga.com/>
An industry association that provides educational opportunities for pest management professionals, as well as information for consumers on IPM and contact information for licensed pest control companies.
- EPA Center of Expertise for School IPM:
<https://www.epa.gov/managing-pests-schools>
Hosts free webinars featuring national experts relaying practical strategies for improving IPM programs in schools.
- Georgia Department of Agriculture Pesticides:
<http://agr.georgia.gov/pesticide-product-and-registration.aspx>
Offers a search engine for pesticides registered in the state of Georgia, where users can view product labels and instructions for safe use.
- Georgia Department of Public Health:
<http://dph.georgia.gov/public-health-districts>
Provides contact information for health departments for each Georgia district. Environmental health programs, within each public health district, inspect school cafeterias and may provide mosquito control.

- Georgia Mosquito Control Association:
<http://www.gamosquito.org/>
A non-profit organization consisting of local and state government officials, pest management professionals, and academic members. Provides a multitude of resources on mosquito control and prevention.
- Georgia Pest Control Association:
<http://gpca.org/>
An industry association dedicated to educating pest management professionals, while also providing the public access to contact information for licensed pest control companies throughout the state.
- National Pesticide Information Center:
<http://npic.orst.edu/>
Provides objective, science-based information about pesticides to allow consumers to make informed decisions about pesticides and their use.
- School IPM Program of North Carolina State University:
<http://schoolipm.ncsu.edu>
The IPM Program's website provides numerous IPM resources which are useful in any state, including an IPM manual, sample IPM forms, IPM presentations, and fact sheets.
- Management of Pest Insects in and Around the Home. February 2013. University of Georgia Extension Bulletin 1412, 34 pp., color. Available free, in PDF format, at www.caes.uga.edu/publications. This 34-page bulletin provides color images of 75 of the most common Arthropod pests in and around urban and suburban environments in Georgia, and discusses options for their management. Includes introductory sections on key principles of IPM.
- University of Georgia Extension county offices:
<http://extension.uga.edu/about/county/>
Provides contact information for all Georgia Cooperative Extension county offices. Your local county extension office can be contacted by calling 1-800-ASK-UGA1.

