

Chapter 1 Pest Management / Mold & Mildew

1.1 Introduction to Pest Management

Pest Management is one of the key routine maintenance activities performed by the BHA. The BHA's objective is to control pests in apartments, common areas, basements and grounds at all times.

As defined by the BHA, Pest Management includes:

- Performing yearly inspections to identify pests in BHA properties and determine the level of infestation.
- Raising the level of resident awareness of Pest Management techniques in apartments.
- Improving individual resident housekeeping levels when required to avoid pest infestation problems through education and lease enforcement.
- Improving general development conditions, such as litter and overflowing dumpsters that contributes to pest infestation by providing food, water and shelter for insects and rodents.
- Performing other maintenance tasks as necessary, such as blocking up holes that rodents can come through and repairing leaks, reducing or eliminating harborage where pests reside.
- As a last resort, chemical treatment to eliminate/control pest populations.

Management staff needs to work with residents to determine the most effective methods to use to eliminate pest problems. Although this section focuses on rodents and roaches and other insects, Managers will, from time to time, need to deal with other animals, such as feral cats or pigeons, as well. Bedbugs are becoming a frequent problem. Work of Managers may include obtaining quotes from contractors, determining the frequency of inspections/treatments to control pests in the development and developing ways to increase resident awareness with either printed or verbal information.

Refer to Chapter 37 – Regular Custodial Preventive Maintenance for more information on scheduling activities for Pest Management and maintaining service records

1.2 Types of Pests

Types of pests that could be encountered in the Boston Housing Authority, include, but are not limited to:

- ants
- bats
- bedbugs
- bees/wasps
- birds
- carpenter ants
- cockroaches
- feral cats
- fleas
- flies
- grubs
- houseflies
- lice
- mice
- mosquitoes
- moths
- raccoons
- rats

- silverfish
- skunks
- squirrels/chipmunks
- termites
- ticks
- weeds

Roaches and rodents (primarily mice, and in some cases rats) have been the most prevalent problems at BHA developments in the past. Fleas are also a problem, especially in basements where feral cats have made homes, and in basements with dirt floors and/or a lot of moisture.

More recently, bedbugs have become a growing problem. Bedbugs, which seemed to be eradicated in the US after World War 2, are back and are a problem not just in BHA housing, but many other housing complexes, colleges, cruise ships and hotels/motels.

1.3 Control Methods

Integrated Pest Management (IPM) is a term used to reflect the use of a combination of pest control methods, including resident education, methods to exclude pests from individual apartments (i.e. caulking and otherwise sealing holes in walls and floors), site cleanliness, apartment cleanliness, baiting, trapping and chemical treatment. IPM is focused on using chemical application as a last resort, as chemical treatment may have adverse health effects on residents. The four basic IPM principles are (1) monitoring pest populations with sticky traps to find out where pests are living and hiding, (2) blocking pest access and entryways, (3) eliminating food and water, and (4) applying low-toxicity, low-risk pesticides only as necessary to address problems. Chemicals will be applied only on an “as needed” basis. The need for chemicals will be determined by an initial thorough inspection and follow up monitoring of pest activity.

Methods of control depend on the problem. Many chemicals are on the market to control pests, primarily insecticides and herbicides. There are traps and poisons to control rodents. All means of chemical control must be performed by a licensed applicator, either in house or contracted out. Pests seem to develop a resistance to individual chemicals over time, and it is important to be aware of new kinds of chemical applications as they become available on the market. The use of “bombs” to control pests, particularly roaches, in apartments is prohibited. Residents are not permitted to use pest bombs, due to the danger of explosion. Residents’ use of any pesticide products should be highly discouraged. Many pesticide products available to the general public will counteract the low toxicity products being used by BHA Pesticide Applicators and contractors. Fogging is, also, prohibited but dusting may be necessary in basements for treatment of fleas.

Poor housekeeping contributes to the pest problem. Therefore, resident education, preparation prior to the pest contractor’s visit and the use of housekeeping citations are important means to decrease pests in public housing and increase the efficacy of the pest contractor’s service call. Poor site cleanliness and inadequate trash/garbage storage also contribute to pest problems.

It is a goal of the Boston Housing Authority that all Developments incorporate IPM practices into their annual Pest Management Plan. All Developments should strive to develop and implement an IPM plan as their budget permits. In order to be effective, IPM must be implemented in entire buildings [not random units] and it has been found that a year long contract vs. a partial year contract is more effective. The use of the quotation sheet that accompanies the BHA IPM Spec will give the manager the tool to set up an IPM contract and set parameters for the numbers of units in the base contract to be initially inspected, frequency and number of units for return visits for monitoring and treatments if necessary and a line item for common areas to be inspected and treated, also, only if necessary. There is a place to include bedbug inspections, treatments and follow up inspections and treatments but the IPM spec does not address the bedbug problem completely. It gives the manager a way to immediately address a bedbug issue while putting together a separate contract to inspect and treat all apartments that abut the bedbug infested apartment found by your IPM contractor or BHA staff. See Bedbug Controls for a full description of the BHA treatment policy.

You can find the BHA IPM Spec and IPM quotation sheet (to be cut and pasted on a site based quotation form) in the S:drive, SOP folder, SOP appendices, Chapter 16, Pests and Mold, Pest Control Specs folder.

1.4 Use of In-House Staff

The BHA pays for extermination training and licensing of Laborers and Janitor Groundskeepers. All staff that have these licenses are permitted to perform chemical applications to control pests and weeds.

When utilizing in-house staff make sure they have a valid Massachusetts pesticide applicator's license and it is on their person when performing pesticide applications on any BHA site. They must have the license on file with the Risk Management Department. Send a copy to the Maintenance Systems Manager and it will be scanned into the development and program folders in the SOP. Any employee who would like to become a licensed exterminator should contact the Maintenance Systems Manager. They will be supplied the materials needed to study for the test and the schedules for workshops and tests offered. The workshops and tests are given at the UMass Extension Center, Waltham. The Maintenance Systems Manager and the Risk Management Department will process paperwork necessary to acquire materials, schedule workshops and tests. The BHA will incur all initial costs but if the employee fails the first test, they must pay for any additional tests themselves. More information on how to obtain an applicator's license is contained in S:drive, SOP folder, SOP Appendices.

All license holders should have a copy of the Pesticide Applicator Training Manual on-hand and/or a copy in the maintenance office. License holders obtained this manual and all other study materials when they applied to take the license exam. All pesticide applicators are required to know basic safety and handling rules for pesticide use, this information is contained in this manual. Copies of the Manual can be obtained from the Maintenance Systems Manager. It is also the license holder's responsibility to review the Material Safety Data Sheets [MSDS] for all pesticides products before commencing any pesticide treatments. [Refer to Chapter 3]

The BHA pesticide applicators should be performing West Nile Virus Treatments at all BHA developments on a yearly basis as requested by the City of Boston. Only licensed pesticide applicators can apply chemical weed control in the BHA even if the product is available to the general public. BHA licensed pesticide applicators should perform all chemical weed control unless contracted out to an approved pesticide contractor.

1.5 Use of Contractors

Developments do not have the staff to exterminate their entire development and so it is necessary to hire a contractor for a particular problem or to perform a yearly IPM contract. The practice of hiring a contractor once or twice yearly to perform chemical treatments in every apartment should cease. It has been proven time and time again that flush outs (chemical controls only) are not successful and pest populations continue to thrive in the BHA. The pests will continue to thrive until pest's basic needs are no longer present: food, water and harborage.

Managers/Superintendents should contract with a licensed contractor from the state contract list, FAC50. This contractor should be IPM certified and an awarded contractor in our Region – Boston is region 4. You may access this information on the website - <http://www.comm-pass.com>. All state contracts are updated or put out to bid on a regular basis so always check the website before utilizing the state contracts to verify that there have been no changes.

Other requirements when awarding a contract are the contractor must show evidence of skill at providing IPM services; at least 5 years experience in providing pest control services; they must provide a certificate of Contractor's general liability insurance and worker's compensation insurance; they must provide all names of

their pesticide applicators and copies of their current pesticide applicators' licenses to the property manager or tenants if requested. All pesticide applicators must be fully licensed as required by the state of Massachusetts, MGL Chapter 132B: Section 10.

The contract should not be awarded based on lowest price only. The contract should be awarded only when the contractor meets the minimum requirements, shows past performance, proposes a quality IPM plan and commits to perform as a partner at a higher level and finally on the quotation provided.

1.6 Scheduling and Performing Inspections and Treatments

Scheduling extermination will depend on the magnitude of the development's problem. As a general rule, all developments should have some form of IPM contract. This contract should include a yearly thorough inspection of all apartments, common areas, basements and utility rooms within the property. Residents should be encouraged to prepare their apartment for this inspection. Removal of all items in the closets, cabinets and drawers is imperative so the pesticide contractor can get a true reading of the infestation levels in the apartment. The preparation tends to compel the resident to clean out unwanted items rather than put them back after the inspection is completed. Residents must receive a flyer from the management office at least 48 hours in advance of the extermination. Entry into all apartments is mandatory. If every unit is not inspected and treated if necessary, the program will not be effective. If the resident received proper notice and they are not home, use the office key and where necessary break the lock. If the lock has to be broken, a resident charge is in order. If the pesticide contractor is required to return to the apartment with an additional charge to the BHA, you should consider charging the resident for the amount of the additional charge.

It is a good idea to make sure that there are no holes or raceways for the pests to travel in at the same time as the initial inspection. The closing of small holes is the responsibility of the contractor and is included in the IPM spec. Any holes too large for the contractor to correct with approved materials such as expandable foam, copper wool, spackle or joint compound and leaks found during the inspection, should be reported to the manager. Work orders generated because of these reports should be considered urgent and corrected as soon as possible. At every vacancy turnover, caulking and sealing of all possible pest entry points into apartments is required (Refer to Chapter 20). It is also required to inspect for holes and raceways whenever a resident has a recurring problem unrelated to housekeeping. Regular progress meetings with the pesticide contractor/technicians should include reports of poor housekeeping. Also, at the initial inspection and any time the contractor enters a unit for treatment or monitoring the IPM spec requires them to hepa vac the apartment capturing all dead and live pests seen at the time of the visit. Continual vacuuming by the resident is needed to clean up any dead carcasses or eggs left behind.

After the initial inspection/treatments are complete, a list of units should be developed that require follow up inspections, monitoring of pest activity, and subsequent treatments. This list called the focus list should include but not limited to all apartments with visible pest activity and housekeeping issues. Residents who were not initially on the focus list but have visible pest activity through out the year should be encouraged to put in a work order and should be added to the focus list for contractor follow up. Any pest activity noticed by BHA staff throughout the length of the contract should be reported to the maintenance super or manager for contractor follow up, too.

An IPM Housekeeping Log can be found in the S:drive, SOP folder, SOP appendices, Chapter 16 – Pests and Mold, Pest Control Specs. This can be used to track focus units. There is a column for housekeeping issues, health issues such as asthma (roach and rodent feces and parts are known to trigger asthma attacks), access to the apartment issues, and any corrective action taken. Dates of inspection, monitoring, treatments and educational visits can be noted on the housekeeping log as well.

1.7 Service Reports

At the time of pesticide application, the contractor or the in-house BHA pesticide applicator must document all problems encountered including: the office key didn't work, there was a dog in the apartment so they couldn't enter, severe housekeeping problems, maintenance issues and levels of infestation. All contractors and in-house staff must complete the "BHA Pest Control Service Record" for every unit treated. See S:drive, SOP Folder – SOP Appendices for a copy of this form. All reports, records and housekeeping citations must be maintained in the annual Service Records Binder. Many contractors have their own service record reports. They are not required to fill out an additional BHA service record report but must supply the BHA with a copy of their companies' report.

1.8 Feral Cats

Those developments that have a feral cat problem need to work closely with the Animal Rescue League or the M.S.P.C.A. They may provide you with "Have-a-Heart Traps" to capture feral cats or you can purchase them. The traps must be monitored on a daily basis and should never be left in basements over a weekend (that would be considered cruelty to the animals). After capture, the agencies will come and pick the cats up or you can drop them off. It may be necessary to provide food/water until you are able to drop off the cat and trap if it is borrowed. Residents should not be allowed to feed the feral cats. Feeding feral cats or birds can contribute to a rodent problem so enforcing the "no feeding rule" is very important. Make sure all basement doors and windows are secure to eliminate an entrance for the cats. Individuals caught breaking basement doors and/or windows should be dealt with according to the BHA lease. Keeping the feral cat problem to a minimum controls the flea problem in the basements, as well.

1.9 Bedbug Controls

Bedbugs are experiencing a resurgence across the country and therefore complaints about bedbugs are increasing in all types of housing. Public housing is not immune to this problem. Procedures to aggressively treat and control bedbug infestation have been developed and must be followed at all times.

When a resident makes a complaint that they have bedbugs or that something is biting them but they can't identify the source, a licensed exterminator (contractor or B.H.A. licensed pesticide applicator who can demonstrate bedbug experience) must inspect the apartment to verify the existence of bedbugs. When bedbugs are identified the following steps (complete procedure is in the S:drive, SOP appendices, Chapter 16 – Pests and Mold, Bedbugs folder) must be adhered to:

- 1) Perform an inspection of all apartments that abut the apartment where bedbugs have been identified. This should include the apartment above, the apartment below and all apartments beside where the original complaint was lodged. Monitoring traps should be placed in all sleeping areas (question the residents) in all apartments that abut the complaining apartment as well as that apartment. If bedbugs are found in any of the apartments adjacent to the original apartment, all steps must be followed for each apartment where bedbugs were identified.
- 2) Send a notice to the residents that a treatment is needed and include the "Preparation Required Prior to a Bedbug Insecticide Application" which can be found in the S:drive, SOP appendices, Chapter 16 – Pests and Mold, Bedbugs folder. Some extermination contractors might have their own preparation requirements. The requirements developed by B.H.A. should be considered the least required before the treatment. The contractor can request additional preparation depending on the conditions of the apartment. We are required to give a 48 hour notice to all residents but a 72

hour notice or greater if possible is suggested because of the extent of preparation required to treat for bedbugs.

- 3) A treatment for each apartment where bedbugs were identified takes place on the date of the notice. Suggested insecticides are Phantom or Suspend – as of 11/1/04. It is recommended that a treatment not happen if the resident is not prepared. It will be wasteful to do so. If the resident does not do their part, this procedure will not work. Bedbugs are very elusive and have long dormancy periods (can live up to a year with out a blood meal). After the treatment, place monitoring traps in all sleeping areas (again, get this information from the resident).
- 4) After two weeks, the exterminator should return to inspect and document the activity in the original complaining apartment and all units that abut that apartment. Additional treatment(s) will be determined through regular inspections done every two weeks until which time it is determined that the problem no longer exists.

It is not necessary to pay a contractor to monitor the apartments. If you have a licensed applicator on staff, they are capable of inspecting and monitoring the activity of bedbugs on your site. Most superintendents with experience can inspect and monitor the activity, too. Bedbug treatment and control is very expensive so if you can cut some of the cost by monitoring the apartments utilizing B.H.A. staff, it is highly suggested that you do so.

Furniture and other personal belongings should not be thrown away unless an approved contractor has made that determination. Moving infested belongings out of the apartment and out to the dumpster could potentially infest the entire building. There are mattress covers available on the market that can encapsulate a mattress after treatment which avoids replacement. The rule of thumb should be that the licensed exterminator/contractor should make the determination what if anything should be removed from the apartment. All items that need to be disposed of should be disposed of by the contractor in a way that other residents can not reclaim and infest their apartment, i.e. tear the mattress beyond repair or spray paint with large letters, "BEDBUG INFESTED" or something equally daunting.

1.10 Resident Education

Integrated Pest Management includes a large resident education component. Even if you are not fully engaged in IPM, it is important that residents receive guidance, as needed, about pest control. Most manufacturers of pesticides have free literature that can be acquired to give to residents. It gives instructions for preparation prior to extermination, what to do after the pesticide has been applied, and tips on housekeeping and food storage. Citations must be issued by management if housekeeping is a problem. Follow up inspections are necessary to ensure the resident is keeping their apartment clean. To keep pests to a minimum it must be a team effort between the residents and the maintenance department.

The BHA has created various information sheets (see S:drive, SOP folder, SOP Appendices, Chapter 16 – Pests and Mold) for use by management when housing new residents and working with existing residents with pest problems. The Boston Public Health Commission has made available to the BHA a brochure in a variety of languages that can be given to residents at the time of their orientation or when pest problems are found in apartments – "Healthy Homes; What you need to know about pests and pesticides to protect your family's health." They, also, have provided us with bedbug information sheets which were translated into Spanish, Chinese and Russian. These sheets can, also, be found in the SOP appendices, Chapter 16 – Pests and Mold.

1.11 Pest Management Plan

Each development must create an annual pest management plan as part of the annual preventive maintenance plan. This should be coordinated with budget planning. The plan must be submitted to the

Assistant Director of Property Management or Regional Manager by April 1st, annually and must include at least the following elements:

- **Schedule** - Describe how many units are part of the IPM plan, frequency and number of return visits and monitoring.
- **Pest control methods** to be used - baits, gels, etc
- **Pest Problems** – Describe current pest problems
- **Education** - Describe Resident education plan
- **Call-Backs** - Describe Call back procedures; complaints during contract period.
- **Current Contractor** – List contractor name, address, PO #, contact person and phone #
- **IPM plan** - Describe in detail the IPM practices in your pest management plan.
- **Other Pertinent Information**

1.12 Pest Control Record-Keeping

License Holder's Responsibility:

In-house employees who perform pest control services on BHA property must maintain records of **all** pesticide usage by filling out the **BHA Pest Control Service Record form**. See S:drive, SOP folder - SOP Appendices for a copy of this form. The information recorded on these forms will be submitted to the State annually as part of the Pesticide Usage Reporting process See S:drive, SOP folder – SOP Appendices for information on Pesticide Use Reporting to the State. In-house employees who perform pest control services on BHA property are required to keep a copy of each completed BHA Pest Control Service Record form for his/her own personal records. A copy must also be filed with the corresponding pest control work-order and submitted to the Maintenance Superintendent to file. Pesticide Contractors are responsible for reporting their own usage and is not the responsibility or concern of the BHA.

Maintenance Superintendent's Responsibility:

The Property Manager or Maintenance Superintendent must insure that all pest control work-orders have a Pest Control Service Record document attached. The Property Manager or Maintenance Superintendent must maintain copies of all pest control work-orders and pest control service records in their Service Record Binder.

Program Maintenance Supervisor's Responsibility:

The PMS should on a yearly basis, gather the pesticide usage reports from their pesticide applicators and forward to the Service Programs Coordinator at Central Services. He/she will compile all the reports and submit them to the State annually with insurance information from the Risk Management Department. The information provided by the in-house licensed personnel on the BHA Pest Control Service Record forms is the pesticide usage information that will be submitted to the State annually. This must include all pesticides used. Remember that products available to the general public must still be reported by the B.H.A. such as Round Up for weed control.

Outside Contractor's Responsibility:

Outside Pest Control Contractors can use the BHA Pest Control Service Form or may use an equivalent form developed by the Contractor. If the contractor chooses to use their own form, the B.H.A. manager should review it and approve its content prior to the start of the contract.

All record of inspections/treatments shall be maintained in the Preventive Maintenance Annual Service Record Binder.

1.13 Mold and Mildew

Mold and Mildew generally grow where there is a combination of moisture and lack of ventilation. Staff needs to identify the area and investigate the source of moisture. If the resident references health issues inform Management of this condition.

- Roof and drain areas need to be investigated.
- Building envelope, window and flashing need to be examined.
- Plumbing and steam leaks need to be addressed.
- Housekeeping issues need to be addressed, dryer exhausts and humidifiers.

Once the introduction of moisture has been repaired, staff should focus on cleaning the area thoroughly. Use of all necessary protection should be used during this work. Review the Material Safety Data Sheets [MSDS] for all chemicals and cleaners before starting work. Residents should vacate the work area and it should be adequately ventilated. Stain-kill and repaint areas of cleaned surfaces.

Mold and mildew can grow in an apartment when there is excess moisture. Correcting a mold/mildew problem is a multi- step process:

1.13.1 Determine the source of the moisture

The water may be a BHA (as landlord) problem if it is caused by:

- Roof leak
- Exterior wall leaks
- Leaks around windows
- Plumbing leak, including hot & cold water supply or drains
- Steam leak

The water may be a resident problem if it is caused by:

- Excessive steam-type cooking
 - Use of humidifiers
 - Excessive showers
 - Improperly vented dryers
 - Lack of turning on heat
 - Or a combination of the above without opening windows or using fans
- Or, water could be coming from a combination of these sources.

1.13.2 Repair the leak(s)

If it is a BHA responsibility, fix the source of the leak immediately or as quickly as possible. BHA Maintenance Services Division crew members are available to assist with roof leaks or leaks in exterior walls or around windows. Development crews should fix all plumbing and steam leaks.

1.13.3 Dry out the apartment

Give the apartment some time to dry out – use fans and/or de-humidifiers if practical.

1.13.4 Provide resident education

If it is a resident-caused problem (or the resident is contributing in some way) provide the resident with the resident flyer, and show them – by on-site demonstration as much as possible - the types of things they can do to prevent the water build up. Use the information sheet (see appendix).

1.13.5 Repair the damage

Regardless if the initial cause was a BHA or a Resident responsibility, BHA must repair the damage unless the mold/mildew is limited to the tile areas of the bathroom, in which case the resident is responsible for cleaning it.

In most cases, the mold is limited to painted surfaces. To correct the problem:

Wash thoroughly with TSP or other detergent. TSP has almost no odor and can be very effective or you can use another type of cleaner. Use rags or sponges; dispose of them after use so as not to spread mold spores.

You may want to ask the resident to leave the apartment during remediation so that the odors from the materials you will use will not bother them. Also be sure to ventilate the area well while you are working to reduce the length of time that odors remain. However, you do not want to create too much of a cross ventilation because the wind created can spread mold spores from one place to another inside the apartment

After washing down the mold thoroughly, allow to thoroughly dry. Then paint the area with stain kill (alcohol based). Allow to dry thoroughly, and put on a final coat of paint. It may be necessary to paint a whole wall or ceiling even if you are only patching a small area.

If the mold or mildew has gone deeper than the surface of the wall or ceiling, i.e. penetrated through the plaster or wall board, you may need to remove a section of plaster or wall board completely. In this case, be sure to cut around the entire section affected by mold and dry out the wall behind the area completely. Then replace the plastering or wallboard, and finish as usual with primer and paint.

1.13.6 Protection for workers

While cleaning mold, the workers should wear skin, eye and respiratory protection. Gloves should be. Regular household rubber gloves are appropriate. Goggles should be worn which are designed to prevent the entry of dust and small particles. Do not use plain safety glasses or goggles with vent holes.

In addition, respirators should be worn. Most painters have already been fitted for respirators. For laborers, you should obtain at least N-95 respirator or HEPA filter cartridge type respirator. These are available through central stores.

1.13.7 General Comments

Only when you really can't solve the leak – for instance the crew has patched several times and it will not hold – should you decide to move the resident and re-code the unit as uninhabitable until a capital project can fix it.

If the sole source of water is related to resident issues as described above, and you educate the resident and repair the damage, and it recurs, be sure to maintain good documentation of all the corrective actions you have taken. You may need to charge the resident if there are repeated cases of mold growth if there are no BHA-responsibility water leaks in the apartment.

1.14 Appendices to this Chapter

Appendices to this Chapter can be obtained on the Public P: Drive in the folder labeled **SOP Appendices**, in the sub-folder labeled **Chapter 16 – Pests & Mold**. Appendices include Pesticide Licensing information.

BHA Pest Control Records form; Mold & Mildew worksheets; Mold & Mildew Maintenance, Means & Methods Guidelines; Holiday Tip Sheets; Move-in instructions forms and other Pest Management information etc.
Note: appendices are subject to addition and change at any time.

