# Pest-Specific Action Plans

## Use these guides if you are including pest-specific plans in your IPM plan.

## Bed Bugs

In-House Plan for prevention

1. **Educate** all staff and residents. They should be aware of the signs of bed bugs, how to inspect, and ways to prevent bringing them home. In-person resident meetings, brochures, and posters will be used to build awareness and encourage reporting of suspected infestations.
2. When **bed bugs are reported** a bed bug specific work order will be used. Inspection by qualified staff or professional will occur within 3 days of reporting and treatment will be scheduled no more than 5 days from confirmed infestation.
3. **Inspection**: all units will be inspected at least one – two times a year, or quarterly if there is a history of bed bugs in the unit. Passive bed leg **monitors** such as interceptor traps placed under furniture legs, make this easier. Depending on infestations rates and budget, these can be placed in all units, just in currently infested units and neighbors, or units with bed bug history . Active monitors with a lure can also be used. Ask you pest control company to supply these or share a bulk supplier.
4. **Seal all cracks and crevices** around pipes, utilities, bathroom vents, under doors, etc. to prevent infestations from travelling between apartments in multifamily housing.
5. Management may **supply monitors and mattress encasements** for free or available for residents to purchase at cost if contractor does not provide as part of treatment.
6. A thorough inspection and cleaning should be done at **unit turnover**. Desiccant dusts can be applied in hard to reach places such as wall voids and under flooring if it is replaced.
7. **Assistance** should be provided to residents who are unable to perform the necessary treatment preparation instructions.
8. **Lease** includes clause to ensure residents will cooperate with treatment preparation instructions and a fine will be issued if a resident is non-compliant but minimal treatment will still be done to prevent the spread of bed bugs to other units.
9. **Cost of treatment** will be covered by building management. It is impossible to prove why a re-occurrence of an infestation occurs and is often caused by treatment failure rather than resident reintroduction. Charging residents for the cost of treatment discourages reporting infestations to management and encourages un-safe and ineffective do-it-yourself treatments.
10. **Home remedy and over-the-counter product** use by residents is discouraged and should be noted in housekeeping inspections.

Pest Management Plan:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_will be responsible for **record keeping**
2. **A plan for regular inspection (canine or visual) and monitoring**. Units with no history of infestations will be inspected at least annually. Units with a history of infestations will be inspected quarterly. Units with active infestations will be inspected every two week and retreated until the unit is cleared. A 45-day period with no live bed bugs or new bites is needed to confirm a unit is cleared of an infestation. If more than 6 chemical treatments are applied a re-evaluation of treatment and resident behaviors will be made and adjustments to treatment will be made according to possible reasons for failure. If more than ONE heat treatment is needed a re-evaluation of treatment and resident behaviors will be made to pinpoint reason for treatment failure.
3. If **canines** are used for inspection, alerts should be verified with evidence (a live bug/s or egg/s), ideally the canine team should be independent from the contractor used for treatment, and they should be certified by an independent certifying agency such as NESDCA (National Entomology Scent Detection Canine Association).
4. **Vacuum** should be used to remove live and dead bed bugs
5. **Heat and pesticide treatments** combined are viable controls. Freezing techniques are less reliable.
6. **Heat treatments** may include using clothes dryers, containerized heat treatments or heat chambers, and/or whole unit heat treatment. When using heat chambers or whole unit heat treatments contractors should verify thermal death point was reached and provide a temperature read out that indicates the temp was reached in the hard to reach areas (ie. between cushions, inside drawers) and held for the appropriate time. Bed bugs and eggs die within 90 minutes at 118°F (48°C) or immediately at 122°F (50°C). During a heat treatment, the air temperature in the room is typically between 135°F (57.2°C) and 145°F (62.7 °C). Because heat cannot penetrate walls, an insecticidal or desiccant dust should be used in the wall voids. Often an pesticide barrier is used to discourage bed bugs from escaping as the room heats up. Heat treatments should be only be used only when live bed bugs or eggs are found. Whole unit heat treatments can be used effectively for high level infestations or in homes with clutter. Clutter makes chemical treatments less effective because hiding places make it harder to reach the bugs with the chemical.
7. Any **Pesticides** the pest management professional (PMP) applies should be effective and present the least risk to residents and pets. PMPs must submit the SDS for each product they plan to apply to management. Bed bugs have become resistant to many of the commonly used pyrethroid products. Contractors should rotate products by active ingredient. PMPs should also include an insecticidal dust treatment of wall voids in their protocols.
8. Treatment should include **mattress encasements**. If not part of contractor's treatment building management will make bed bug encasements available for free or at cost to residents. Encasements make bed bug inspection easier and eliminates the need to discard mattresses and box springs.
9. **Adjacent units** including across the hall should be inspected, monitored and treated if bed bugs are found. Treatment should not occur unless bed bug evidence is found or the level of infestation in the adjacent unit warrants a barrier treatment to prevent the bed bugs from entering the neighboring unit.

## Cockroaches

In House Plan for Prevention:

1. Address **housekeeping** issues identified during housekeeping or pest control inspections. Let resident know that eliminating food and water is an important part of cockroach control.
2. **Residents** should be discouraged from using over-the-counter bug bombs and sprays. These products can make it more difficult to treat cockroaches because it will scatter the cockroaches into harder to reach hiding places and encourage pesticide resistance to build up in populations.
3. Address **maintenance** issues such as fixing leaky pipes, dripping faucets, sealing and fixing cracks and holes that cockroaches could get through and/or use as harborage.
4. Clean **trash chute** regularly

Pest Management Plan:

1. **Monitoring** will be done in all units. At least three sticky monitors will be placed under sinks and near other sources of food, water, and harborage in the kitchen and bathrooms. Monitors should be checked during all pest control visits (staff can also check these monitors during housekeeping inspections and during maintenance visits for routine repairs. If pests are present they can make a note and inform property manager that the unit needs service)
2. **Inspections** will be done in all units, at least once a year. Heaviest infested units require bi-monthly inspection and treatments. Units with past issues will have quarterly inspections.
3. **Record keeping**, will include trap counts to determine if population is decreasing or increasing. This determines if treatment is effective.
4. Invest time and resources in the most heavily infested units first (“**focus units**”) as opposed to treating all units the same number of times per year, the PMP should use monitor numbers to designate the **“focus units”** then work toreduce or eliminate the heaviest infestations first as they are often the source of insects which can spread through buildings.
5. Targeted chemical use will include **baits, dusts, and insect growth regulators** (IGRs). Liquid residual sprays are discouraged but if used, they should only be applied as a crack and crevice treatment. *Monthly or quarterly sprays will not eliminate infestations, therefore will not be used..*
6. Chemicals in **baits** should be rotated with every treatment or at least every three months, to discourage resistance or avoidance. Baits should also be tested to determine if cockroaches readily consume them. If cockroaches are not consuming bait, a different bait should be applied. If all the bait is consumed before contractor’s next visit, that indicates more a greater amount of bait should be applied.
7. **Bait** amounts applied should correspond to numbers of cockroaches in monitors. Place three sticky trap monitors in each apartment – One under kitchen sink, one near stove or between appliances and counters, and one under bathroom sink. If there are 0 cockroaches, place no bait. Bait is a food source and could attract cockroaches where there are none. 1 to 50 cockroaches in three traps, Make sure PMP is using about 7.5 g of bait; 50 to 100 cockroaches in 3 traps, 15 grams of bait; 100 to 500 cockroaches, 30 grams. If more than 500 cockroaches, PMP should place 60 grams of bait strategically in unit, near cockroach hiding spots – kitchen and bathrooms.
8. **Dusts** will be applied in wall and cabinet voids and other out of reach places. Unit turnover is the ideal time to apply dusts. Dusts for cockroach control include less toxic products such as boric acid dust or a desiccant dust, and insecticidal dusts.
9. **Vacuum** should be used to knockdown high populations and to remove dead cockroaches and the associated allergens.

## Rodents

In House Plan for Prevention:

1. Share with **residents** their role is to limit accessto food, water and hiding places.
2. Use **exclusion** by sealing cracks and holes around utilities, replace or install rodent-proof door sweeps, use copper mesh with sealant, putty or spackle to deter chewing.
3. Follow the [CDC guidelines for cleaning up rodent droppings](https://www.cdc.gov/rodents/cleaning/index.html) to eliminate pathogens and allergens.

Pest Management Plan:

1. T**raps** will be used whenever possible - (multi-catch live traps, or lethal traps such as snap traps, electronic traps, etc)
2. PMPs will use **rodenticides** judiciously and in secure, tamper-resistant stations according to EPA regulations.
3. Eliminate **mice living in appliances and furniture, and their nests**. Often mice nest in the insulation in stoves, in refrigerators, and inside couches. These mice, their nests and droppings should be removed. Although this requires time and effort, mice will not be eliminated if they are surviving and breeding in apartments regardless of the amount of sealing and caulking and rodenticides used. Flushing agents and glue boards will be needed to remove and catch the mice evicted from their nests. Appliances may need to be discarded and replaced.
4. **Rats** (and other outdoor rodents)- Eliminate trash and debris on the grounds, check dumpsters for rust and holes, use garbage receptacles which can be closed securely, eliminate any entryways into building by sealing holes the size of a dime or bigger. Bait burrows with rodenticide or use Rat Ice (dry ice in rat burrows). Fill in burrow and check back regularly to see if they remain closed or have become active again.