# An Update on Integrated Pest Management in New York City

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In May 2005, Local Law 37 (introduced by the New York City Council as Intro 329) was signed into law. Local Law 37 (LL37) sets forth a number of requirements related to the use of pesticides on New York City-owned or leased properties with the overall goal of reducing the City's use of hazardous pesticides and promoting the use of safer and more effective pest control practices; an approach, known as Integrated Pest Management (IPM). One of LL37's requirements is that City Agencies through the DOHMH submit an IPM Plan in January of each year to the Mayor and New York City Council. This report for calendar year 2012 is the seventh annual report submitted to fulfill this requirement and to describe compliance with LL37 and the evolving pest control practices of several agencies.

## BACKGROUND

Local law 37 required that the City of New York discontinue the use of pesticides with active ingredients that EPA and the State of California consider to be potential carcinogens or reproductive hazards. Certain pesticides are exempted from prohibition due to their low potential for exposure or harm or because of public health necessity. A waiver procedure was established that allows the Health Department to grant further individual exemptions from the prohibitions under certain conditions. Posting notices to building occupants twenty-four hours prior to pesticide applications is required as well as new, more detailed record keeping and reporting provisions. The passage of LL37 launched city agencies on a critical review of pest management and pesticide use on city-owned and leased properties. Since LL37 was instituted, there have been a number of major reforms to citywide pest control practices and the local law has encouraged agencies to make pesticide use reduction an ongoing pursuit. The Health Department's Bureau of Environmental Surveillance and Policy (BESP) was charged with the implementation of LL37 and continues to provide technical assistance to agencies in complying with this law.

New York City agencies address a wide variety of pest control issues in a large number of settings – residential units, institutional settings, parks, schools, offices, highway

medians, hospitals, and vacant lots. Agencies continue to build pest management strategies around IPM, which focuses primarily on eliminating or controlling the underlying conditions that are conducive to pest infestation. IPM approaches include structural and behavioral modification to deny pests the necessities- food, water, means of entry and harborage – that they need to survive. At the same time, "pest-proofing" upgrades the overall structural conditions of housing and workplaces. When physical improvements alone are not enough to address an infestation, IPM also encompasses the judicious use of least hazardous pesticides – such as newer gels and baits, and old standbys like boric acid deployed in new ways. IPM is both more effective and safer than pest control that relies primarily on pesticide use.

The Health Department will continue to encourage agencies to use pesticides to control infestation only as a last resort and to critically examine all other options prior to engaging in their use. Later this year, the Health Department will issue its annual report on pesticide use by city agencies. As IPM implementation expands, the use of hazardous pesticides should decrease.

## IPM COORDINATION AND PESTICIDE USE MONITORING

### Inter-Agency Pest Management Committee

Local Law 37 established the Pest Management Committee (PMC) as a forum for agencies to share pest management information and strategies and to plan future reductions in pesticide use. The PMC is convened by the Health Department and is made up of representatives from more than 15 municipal agencies and public authorities. This group serves as the city's pesticide and pest management advisory committee, and meets twice annually.

The PMC meetings continued its focus on providing education on managing pests, guidance on electronic reporting of pesticide use data, and the selection and use of pesticides in agencies' IPM programs. In 2012 emphasis was placed on providing guidance to agencies on how to respond to bed bug complaints, the prevention and control of wildlife and using the newly implemented citywide integrated pest management contract. The PMC will continue to assess ways to reduce pesticide exposures and to better communicate with employees and the general public about safe and effective pest control.

### Agency Pesticide Use Reporting

Local Law 54 (LL54) of 2007 requires agencies to report their pesticide use to the Health Department to enable it to issue a summary report to the City Council by May of each year for pesticides used in the previous calendar year. The New York City Pesticide Use Reporting System (NYCPURS), created by the Health Department has been used by agencies to facilitate this process. During 2012, the Health Department developed managerial reports that agencies will be able to use to query and summarize their own pesticide report data in

order to better track pesticide use and progress towards reducing hazardous pesticide use.

Data continues to be imported into NYCPURS from other electronic use systems. In 2011 31agencies reported pesticide use data electronically, an increase from the three agencies that did so in 2006, when we began collecting data. The Department will continue to provide guidance to agencies and their contractors for electronic submission of pesticide use data. In May 2012, the Department issued, in accordance with LL54 of 2007, the fifth public report quantifying municipal agency pesticide use covering calendar year 2011.

### LL37 Waiver Review Committee

The Waiver Review Committee is tasked with evaluating City agency requests for exemptions from pesticide prohibitions. The committee consists of individuals from across the Health Department, including licensed exterminators, health educators, environmental epidemiologists, risk assessors, and entomologists. Each person is trained in IPM principles and practices and on the requirements of LL37.

In 2012, six waiver renewals were granted as well as the renewal of a blanket waiver for baits and gels containing the prohibited active ingredients fipronil and hydramethylnon for the coming year. These gel insecticide baits are non-volatile and are more targeted than broad application pesticides, they contain some of the same active ingredients and work in a similar manner to already exempted containerized insect baits, and in the right circumstances they can be used in a manner that limits the likelihood of human exposure, consistent with the principles of IPM. A list of waivers granted through 2012 is available on our website (http://nyc.gov/health/ll37).

## IMPROVED RAT MANAGEMENT

### Rat Indexing

The Health Department's Bureau of Pest Control Services (PCS) continued to expand the proactive rat indexing approach in 2012. In 2012, the city performed over 94,000 rat 'indexing' inspections including all of Manhattan, a small area in the Bronx, and for the first time, neighborhoods in Queens and Brooklyn. Over 5,000 properties were identified with active rat signs and the property owners contacted. Several of these properties were issued violations and in some instances baited for rats. Indexing will continue in the Bronx, Manhattan, Brooklyn and Queens in 2013 with the goal of reducing rats in every neighborhood indexed. PCS has also evaluated additional neighborhood based rat management strategies by identifying and addressing neighborhood-specific causes of recalcitrant infestation problems, such as improper garbage management or severely infested sewers or parks. PCS will continue to use data to track, evaluate, and refine its rat management efforts. Findings from the Bronx rat initiative pilot program were published in the September 21, 2012, issue of the "Morbidity and Mortality Weekly Report," a national

publication of the US Centers for Disease Control and Prevention (http://www.cdc.gov/mmwr/index2012.html).

### IPM Field Trials

PCS continues to conduct IPM field trials to better understand how rats can be reduced in neighborhoods without relying solely on the use of pesticides. In 2012 the Xcluder rodent-proofing ground mesh was installed at two new sites: The African Burial Ground National Park Monument and Father Demo Square in Manhattan. In other locations where the mesh was installed three years ago rats continue to be successfully excluded. PCS will continue to collaborate with other agencies to look on new rodent trapping protocols especially in parks with fledging hawks and will test the implementation of multiple "burrow harassment" techniques for discouraging rat infestations in building landscapes and Greenstreet areas as well as the expansion of the use of solar-powered trash compactors (Big Belly) for city streets and parks.

### Training, Education and Information Dissemination

PCS continued to offer free training on Rodent Management in East Harlem and the South Bronx up until the end of May 2012 through its Building Superintendent's Academy. With the ending of this training program, PCS began a new "Request your Own Academy" training program where stakeholders are asked to host and recruit for training and PCS provides the trainer and training materials. Through this model, pest management training is now provided on demand to city agencies, community boards and organizations, day cares, neighborhood associations, community gardens and Business Improvement Districts.

In 2012, 17 training events were conducted with over 340 total participants, mostly representing homeowners, multi-family buildings, neighborhood organizations, urban gardeners and composters and city agencies. Over 140 rodent-resistant trash cans were distributed to training participants as incentives for attending the training.

The DOHMH 3-day Rodent Control Academy will continue to offer training on best management techniques in preventing and controlling rodents. There were two training events in 2012 with 64 attendees representing City Agencies such as FDNY, MTA, NYCHA, DOHMH, and national entities including the EPA, Nassau and Suffolk County Health Departments, the Philadelphia Housing Authority, The National Park Service, Target, Wendy's, The New England Zoo, national pest control supply distribution corporations and 13 private pest professional companies representing companies as far away as Texas.

The Rat Information Portal (RIP) (http://nyc.gov/rats) continues to provide access to detailed information on rat management for tenants, property owners, pest management professionals, community organizations and policymakers. Resources for communities and businesses on rat management are updated annually to reflect new knowledge and practices.

### Intra-agency Rat Management Collaborations

**Department of Parks and Recreation (DPR)** and PCS are working together to remediate rat conditions in NYC parks. The agencies evaluate risks to non-target park wildlife (hawks and owls) from the use of rodenticide baits and evaluate rat mitigation techniques that focused on non-chemical controls. In 2012, this included planning for the installation of new solar-powered "Big Belly" trash cans in Verdi Square (a Manhattan park with rat problems) and the use rat snap traps in tamper-resistant stations instead of rodenticide baits in Riverside Park. In addition, PCS trained two groups of DPR personnel in the burrow harassment technique, to further stress rat populations in Tompkins Square and Straus Parks. PCS will continue to dedicate resources to assist the Parks Department in monitoring and treatment for rats in the case of severe infestation.

**Metropolitan Transportation Authority (MTA)** will continue working with PCS to evaluate and address factors that contribute to the presence of rats within subway stations and new subway station-specific IPM approaches. These include the use of new baiting techniques; novel door/room exclusion technology and operational techniques for subway platform garbage holding rooms to assist in keeping MTA's platforms rat free.

PCS in 2012 initiated a new IPM program with the **New York City Fire Department (FDNY)** to evaluate pest issues (mice, rats, cockroaches, flies, bed bugs) within fire stations. This involves visits to fire houses in each of the five boroughs to assess typical pest issues, the quality of the pest control contracted services, and to provide IPM guidelines for FDNY stations for both interior and exterior areas. A PCS senior scientist evaluates the uniqueness of these stations (sleeping quarters, in-station kitchens, barbeques, vending machines, food storage rooms) relative to necessary IPM techniques.

PCS worked with the **New York City Housing Authority (NYCHA)** in 2012 to launch a two-day Rodent control academy to addresses rodent issues typically associated with large-scale housing authority apartment complexes (exterior rats; interior mice). A strong emphasis was placed on maximizing IPM tools and techniques for both species of rodent pests (sanitation tips for dumpsters and new exclusion approaches for basements) as well as attempting to incorporate the latest technology in tamper-resistant bait stations and safe burrow baiting operations that are critical to public housing environments.

**Central Park Conservancy's** rodent control program continue to be based on proactive, routine inspections; high standards of sanitation, pest-proofing measures; modification of environmental conditions to mitigate pest problems. The use of snap traps will continue to be used and evaluated for their effectiveness in chronically infested areas. Best management practices for their rodent control program will include:

- Identification of targeted pest and establishment of a tolerance threshold
- Establishment of regular monitoring and record keeping system for regular sampling and determination of targeted pest populations throughout Park
- Prevention of targeted pest problems through improved sanitation & timely management of infestations

- Reliance upon nontoxic or mechanical pest management methods such as burrow collapsing and site modification
- Use of NYS DEC registered and NYC DOH "Not Prohibited" category pesticides, when necessary, with a minimal impact on the environment.

## WEST NILE VIRUS

The **DOHMH Office of Vector Surveillance and Control (OVSC)** oversees the city's West Nile Virus Control Program. Its objective is to prevent or reduce human cases of WN virus in the City. Its prevention and control efforts for mosquitoes and WN virus are based on IPM principles. Key components of the IPM program include community outreach and education, responding to standing water complaints to reduce mosquito breeding areas, surveillance and control. Non-chemical controls are employed first and if a chemical pesticide is used it is the lowest toxicity pesticide that is efficacious on mosquitoes. OVSC routinely analyzes surveillance and control data from previous years in order to better prepare for the upcoming mosquito season.

To ensure a coordinated approach in managing mosquito-borne disease outbreaks in the City, DOHMH works closely with the New York State Departments of Health (NYSDOH) and Environmental Conservation (NYSDEC), the U. S. Centers for Disease Control and Prevention (CDC), and other State and Federal and local agencies such as the Mayor's Offices of Operations (MOO) and Environmental Coordination, the New York City Office of Emergency Management (OEM), Departments of Environmental Protection (DEP), Parks and Recreation (Parks, DPR), Sanitation (DSNY), Police (NYPD), Citywide Administrative Services (DCAS), Information Technology and Telecommunications (DIIT) and the New York City Housing Authority (NYCHA). More information on New York City's WN virus IPM program can be found at, http://www.nyc.gov/html/doh/html/wnv/wnvhome.shtml.

## BED BUG PREVENTION AND CONTROL

In response to the resurgence of bed bugs, the city implemented several strategies to address this problem and continued to expand its efforts in 2012. Initial funding from the New York City Council, in 2011 allowed the Health Department to advance the city's efforts.

**The NYC Bed Bug Web Portal**, www.nyc.gov/bedbugs was launched in March 2011 and continues to provide easily accessible sources of information about bed bugs to the public and links to other useful sites. A variety of guidance documents are available which enable residents, businesses and institutions to anticipate, discover and rapidly and safety respond to the presence of bed bugs. Site visits increased by 89% in 2012 with most visits occurring during the warmer months. New information was added in 2012 to assist agencies in dealing

with bed bugs in the workplace. This is posted as, "New York City's Approach to Addressing Bed Bug Complaints in the Workplace" and was a joint effort of several agencies with input from several workers' unions.

**Comprehensive trainings** on detecting bed bug infestations and their prevention and control began in 2011 for the Department of Housing Preservation and Development (HPD) inspectors, NYCHA pest management professionals and facility managers as well as key personnel from other agencies. In 2012 the Health Department continued to offer trainings to agencies and other stakeholders to assist in their educational outreaches and will continue to do so in 2013.

To date over 240,000 **fact sheets and brochures** on identifying and responding to bed bugs have been circulated. A detailed guide, "Preventing and Getting Rid of Bed Bugs Safely", completed in 2009, continues to be the corner stone of the City's bed bug outreach efforts and is available in English, Spanish, Chinese, Russian, Korean, Haitian Creole and Italian. Several municipalities throughout the country continue to adopt and use this guide in their outreach and education efforts.

In 2011 the Office of Vector Surveillance and Control, within DOHMH began offering a **bed bug identification service** to identify insects suspected of being bed bugs. This is a free service that is only available to agencies of the City of New York and limited exclusively to insects discovered within its establishments. In 2012, the program received 213 specimens of which 74% were identified as bed bugs.

### Department of Housing Preservation and Development (HPD)

**HPD's Canine Inspection Team** was established as part of the City's ongoing comprehensive effort to combat bed bug infestations in multifamily residential properties. HPD continues to use their canine team which consists of two trained male beagles and their handlers as part of their Division of Code Enforcement to inspect for bed bugs. Where inspections are carried out by these dogs the accompanying inspector must visually confirm the dog's finding by observing a live bed bug in order to issue a violation. A visual inspection will still be carried out by the inspector even if the dog does not signal that it detects a bed bug.

HPD will continue to collaborate with the Health Department in its enhanced enforcement model for responding to bed bug complaints in residential properties**.** The model clarifies building owners' responsibilities to remediate bed bugs and inspect areas around apartments and common area found to have bed bugs.

HPD through its outreach and education program continues to offer an **e-Learning class** about bed bugs, which can be taken at any time on any computer with internet access. The interactive class discusses what bedbugs are, explores myths about bedbugs and provides some information about identifying and eradicating bedbugs.

### Department of Homeless Services (DHS)

In 2008 DHS, the Health Department and Cornell University's Cooperative Extension Program collaborated on the creation of guidelines for the prevention and management of bed bugs in congregate living environments. These guidelines are available online from the Cornell University's Cooperative Extension Program website, http://www.nysipm.cornell.edu/publications/bb_guidelines/. DHS continues to use these guidelines and has implemented protocols to help prevent the spread of bed bugs in its shelters and homes. Reports of bed bugs may result in isolation of clothing and its separate laundering, thorough inspections, client notification and education, and repeated visits by pest management professionals. Shelter operators and their maintenance staff continue to receive training on the appropriate response to bed bugs. The agency continues to circulate among their shelters information on bed bugs.

### New York City Housing Authority (NYCHA)

NYCHA has established IPM protocols for responding to the presence of pests in its public housing units and follows a protocol that involves working with tenants to prepare their apartments for their visit, applying pesticides on at least two visits where needed, cleaning and vacuuming baseboards and other surfaces and educating tenants on appropriate replacement or isolation of infested clothing, furniture and bedding. The agency has deployed a variety of new equipment and techniques and has placed greater emphasis on the use of HEPA vacuums for allergen, pest and harborage removal, handheld ultraviolet lights for inspections, and exterior oxygen-voiding trash compactors.

NYCHA conducts regular staff training in pest management, including IPM techniques for cockroach, rodent and bed bug control. In 2012 training was expanded in rodent prevention and control for its pest management professionals and in bed bug prevention and control for its residents and social workers. NYCHA is looking to further expand its resident training and collaboration to include other environmental issues. It continues to evaluate its program for compliance with LL37 and will continue to explore and collaborate on IPM programs in the future.

## EXPANDING IPM IN PARKS LANDSCAPE MANAGEMENT

**The Central Park Conservancy** continues to develop IPM protocols with the goal of creating sustainable methods to maintain Park grounds. The use of alternative control products in their horticulture program has resulted in a reduction in the use of conventional pesticides. Best management practices in horticulture include:

- Utilize turf grass varieties and cultivars for over seeding of lawns are specified based on current NTEP (National Turf grass Evaluation Program) data. Varieties and cultivars are chosen for wear tolerance, disease resistance and overall quality.

Proactive cultural practices of turf areas using traditional core aeration, deep / shatter tine aeration, rotary de-compaction, topdressing and de-thatching.

- Effective and timely hand weeding and mulching of landscapes to suppress weeds
- Ongoing training and education of staff and volunteers in best management practices.
- Manual removal of aquatic vegetation in water bodies
- Routine in-house and external laboratory testing and analysis of soil and diseases
- Increased transition from synthetic to bio fungicides which increased 212 % in 2012 to control turf grass pathogens and the use of EPA registered "Reduced Risk" pesticides
- Reduced use of synthetic broad- spectrum post emergence Herbicides by 26% from 2009 to 2012 through transition to citric acid / clove oil based herbicide where appropriate.

The CPC required 48% fewer applications and 98% fewer gallons of the common herbicide glyphosate in 2011 as compared to 2007

In 2007 the **Department of Parks and Recreation** began a series of field trials to test alternative methods of weed control which included methods of both pre- and post-emergent control. Products tested have included organic-based sprays, various heat treatments, the use of various mulches and weed-suppressive perennial plants. Results of these trials showed that while there is no alternative product comparable to existing conventional chemicals for weed control - especially pre-emergents - a comprehensive approach including a combination of methods can go a long way in weed management. The agency will continue its evaluation of alternative weed management strategies

## IPM CONTRACT SERVICES

In 2012 the city awarded a city-wide IPM contract for pest management which is valid from May 1st, 2012 to April 30th, 2017. The contract is currently managed by the Department of Citywide Administrative Services (DCAS) and can be used by all agencies for their pest management needs. The contract is based on IPM principles for managing pests and reflects the requirements of LL37.

## EXPANDING PUBLIC ACCESS TO DATA ON PESTS AND PESTICIDES

The Health Department's **NYC Environmental Public Health Tracking and Sustainability Portal** (www.nyc.gov/health/trackingportal) allows the public to explore neighborhood-level data on a variety of environmental and health topics including pests and pesticide use in NYC. The portal can be used to create reports, tables, charts and maps of the prevalence of cockroaches or bed bugs in the home, mice or rats inside or outside the home,

personal use of pesticides and the frequency with which a pest control professional visit the home.