An Update on Integrated Pest Management in New York City for 2013

Prepared by the NYC Department of Health and Mental Hygiene (DOHMH),
Bureau of Veterinary and Pest Control Services

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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 report in January of each year to the Mayor and New York City Council. This report for calendar year 2013 is the eighth 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's enactment, 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.

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.

In 2013 emphasis continued to be placed on providing guidance to agencies on how to better respond to pest complaints by utilizing established pest management protocols and working more closely with the citywide integrated pest management contractor. 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. For 2013, twenty-two agencies reported pesticide use data electronically, an increase from the nineteen agencies that did so for 2012, and up from three 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 2013, the Department issued, in accordance with LL54 of 2007, the sixth public report quantifying municipal agency pesticide use covering calendar year 2012.

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 2013, eight 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 2013 is available on our website (http://nyc.gov/health/ll37).

IPM Training and Education offered by the Department of Health

The Department of Health and Mental Hygiene offers a wide array of free IPM training to other city agencies and to the public. Within the Bureau of Veterinary and Pest Control Services – both the Pest Control Services (PCS) program and the Office of Vector Surveillance and Control (OVSC) offered numerous training events throughout 2013 as follows:

PCS offers free training on rodent prevention to city agencies, community boards and organizations, day cares, neighborhood associations, community gardens and Business Improvement Districts. In 2013, twenty-one half-day training events were conducted with over 200 total participants, mostly representing homeowners, multi-family buildings, neighborhood organizations, urban gardeners and composters and city agencies. Over 70 rodent-resistant trash cans were distributed to training participants in the community as incentives for attending the training. The intensive 3-day Rodent Control Academy conducted two training events in 2013 with 63 attendees representing City Agencies such as DCAS, NYCHA, DPR, DHS, ACS and the Comptroller's Office.

In 2013, PCS partnered with the New York City Housing Authority (NYCHA) to offer two different two-day Rodent control academies to address 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) and updates were provided on the latest technology in tamper-resistant bait stations and safe burrow baiting operations that are critical to public housing environments. PCS launched a new partnership with NYCHA's Resident Engagement Department to offer training to resident green committees on rat prevention in community gardens. In this new program, residents, NYCHA gardening consultants, green committees and NYCHA pest control staff come together to discuss rat prevention for their housing development. This successful partnership continues into 2014.

IPM Training is also an important component of successful vector management programs. DOHMH's Office of Vector Surveillance and Control (OVSC) provided classroom and field training to exterminators and other employees who are involved with mosquito

control in the City. In 2013, the trainings listed below were provided to 117 participants from five city agencies and the New York State Department of Environmental Conservation in the beginning of mosquito season (April – May):

1. Integrated Mosquito Management in New York City
2. Larval Mosquito Control (including calibration of backpack larvicide applicator)
3. Adult Mosquito Control (including calibration of truck-mounted sprayer)
4. Safety and Health Training for Field Staff
5. Mosquito Surveillance – larval dipping and adult trapping

OVSC has also implemented proactive training for preventing and dealing with bed bugs in the home, office and field. The primary focus of this effort is to train staff. Better education about bed bugs reduces the concern and stress regarding the risk of getting bed bugs. Bed bugs are a very emotional issue, more so than other more serious pests. In 2013, OVSC provided 73 bed bug presentations to 1,633 individuals in the following City agencies/entities and non-profits:

City Agencies/Entities

1. Administration for Children's Services
2. Bronx - District Attorney
3. Department of Citywide Administration
4. Civilian Complaint Review Board
5. Department of Aging
6. Department of Records
7. Department of Health and Mental Hygiene
8. Housing Preservation and Development
9. Human Resources Administration
10. Office of Administrative Trials and Hearings
11. Taxi and Limousine Commission

Nonprofits

1. Community Kitchen and Food Pantry (Harlem)
2. Sauti Yetu Center for African Women and Families) (South Bronx)

OVSC also conducted IPM training for ticks and honeybees. Ticks are a significant public health concern, because of the impact of some of the diseases, such as Lyme disease, babesiosis and Rocky Mountain spotted fever that they can transmit. Education is necessary to help persons avoid ticks and understand how to prevent the diseases that ticks transmit. Three tick IPM presentations were provided to 109 individuals. Honeybees are vital to food and flower production, because of their important function in pollination and their production of honey. Beekeeping is legal in the City of New York, but beehives can be a problem, if not properly handled or if wild. It is important for OVSC staff and others to know and understand about honeybees and proper beekeeping. Two honeybee IPM presentations to 73 individuals were provided.

Knowing and understanding pesticide registration, labeling and material safety data sheets is vital to a successful IPM program. Three IPM trainings were provided to better educate staff regarding the registration process, the anatomy of a pesticide label and the

importance of each part, and the bases and how to read and understand a MSDS. Three training session were provided with a total of 141 persons attending.

Information Dissemination

The NYC Bed Bug Web Portal (www.nyc.gov/bedbugs) provides 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.

The Rat Information Portal (RIP) (http://nyc.gov/rats) provides 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.

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.

OFFICE OF PEST CONTROL SERVICES

Pest Control Services (PCS) conducts rodent management activities throughout the five Boroughs of New York. In 2013, PCS performed over 95,000 rodent inspections in response to complaints and through the proactive neighborhood-based 'indexing' program in Manhattan, the Bronx, Queens and Brooklyn. Over 22,000 orders to abate rat activity were mailed to property owners along with brochures on "Preventing Rats Safely". Almost 10,000 violations were issued to private property owners that failed to abate rats and the conditions conducive to rats. In addition, 1,182 city agency referrals were sent to agencies that had either rat activity or conditions conducive to rats on their property. The proactive rat indexing initiative will continue in areas of the Bronx, Manhattan, Brooklyn, Queens and Staten Island in 2014 with the goal of reducing rats in every neighborhood indexed.

In 2013 PCS developed 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. This holistic, neighborhood based strategy to rat management continues to be implemented in the lower east side and Chinatown neighborhoods of Manhattan and in the Upper West Side of Manhattan.

Intra-agency Rat Management Collaborations

The Rodent Task Force (RTF) continued to meet in 2013 with representation from the Health Department, Homeless Services, DCAS, HPD, NYCHA, Department of Sanitation, the MTA, DOT, DDC, the Parks Department and the Department of Education. A number of inter-agency rat management collaborations were launched out of DOHMH's Pest Control Services Program and the RTF, including:

DOHMH's Pest Control Services and the **Department of Citywide Administrative Services (DCAS)** worked with the Mayor's Rodent Task Force to gain approval for the installation of a Roll-off trash compactor (ROTC) to 100 Centre Street. By installing a ROTC, garbage produced by 100 Centre and other nearby city owned and occupied buildings would be containerized rather than sitting on the curb attracting and feeding rats. **DCAS** submitted designs for the ROTC, to be located behind the building on Baxter Street, to the Public Design Commission and in April 2013 the project received preliminary approval. The project was transferred to the Department of Design and Construction (DDC) and construction is expected to begin in early 2015. Upon completion of the project, DCAS expects a significant reduction in the rodent population surrounding the ROTC, as trash will no longer be placed in bags on the sidewalk.

Department of Parks and Recreation (DPR) and Department of Health's Pest Control Services (PCS) program have an ongoing collaboration to remediate rat conditions in NYC parks, green streets and tree pits. In 2013 PCS and the DPR forestry program tested a loose aggregate fill called "Stalite" in 19 tree beds on the upper west side to test its effectiveness in reducing rat burrowing. DPR and PCS kicked off this activity with a well-attended training for neighborhood tree stewards and started a registry of street trees with rat problems reported by the community. In ten of the 19 trees with rat activity where Stalite was applied, rat burrows did not reopen after two applications. DPR and PCS also collaborated on efforts to reduce rat activity in five upper west side parks/playgrounds and the Broadway Mall. DPR trimmed back harborage, improved garbage management and increased garbage pick-up while DOHMH dedicated resources to a weekly bait application and monitoring visit. Working together, rat burrowing was decreased significantly.

On the Lower East Side of Manhattan, DPR and DOHMH partnered to address a severe rat infestation at Sara D Roosevelt Park. DPR replaced all mesh litter baskets with solid steel litter baskets with lids and added tethers to each lid to combat theft. The DPR manager added mulch and trimmed and cleaned each garden bed, significantly improving line of sight for inspection. The Health Department in turn treated the exposed rat burrows on a weekly basis. DOHMH has provided free rat prevention training to community groups that use the park and the two agencies are working with non-profit groups and the Community Board to find donors for new solar compactor garbage cans for the Park.

PCS and the **Central Park Conservancy (CPC)** collaborated to address a severe rat infestation at the Grand Army Plaza. DOHMH provided training to CPC staff in burrow baiting techniques and rodent stoppage. The staff then created a detailed rat management plan

and protocol using a combination of burrow baiting and exclusion. Rat burrowing was subsequently decreased by over 80%.

PCS is partnering with the **Metropolitan Transportation Authority (MTA)** Maintenance of Way/Infrastructure Division and the MTA Strategic Initiatives Division on an on-going pilot IPM Project to reduce rats in MTA's refuse rooms. By using new door sweep technology and maintenance repairs and replacement of refuse room doors and penetrations, the MTA is better able to deny rats food. The IPM pilot involves approximately 30 subway stations. The worst infested stations were addressed first; about 11 stations have implemented the DOHMH-recommended IPM plan. This project was funded over 1 million dollars by Mr. Joe Lhota (President of the MTA in 2012) and will eventually include all stations. As a result of the IPM project, complaints of rat sightings in subways were down in the second half of 2013.

PCS is also working with the **New York City Housing Authority's (NYCHA)** Technical Resources Unit and Cornell University's IPM Program on an IPM Refuse Room Pilot to address rodent reservoir issues within NYCHA housing complexes. A modification of the MTA Subway Station IPM template will be used throughout this project (described above) in 2014 -2015.

PCS is partnering with the **Fire Department of New York's (FDNY) Occupational Safety and Health Administration Unit** on a series of FDNY- Specific IPM Surveys. These were initiated as a result of rats gnawing on wires of a fire truck causing a failure in the truck's use for a fire response. DOHMH is conducting the survey in three randomly selected fire houses in each of the 5 boroughs as well as some complaining of rodent issues. At each FDNY pilot house, post-IPM inspections meetings were held with the Firehouse's staff or Fire Chief in charge. Three of the 5 boroughs have been completed. The project is on- going into 2014 and is expected to be completed by end of 2nd Quarter 2014.

PCS is partnering with the **Administration for Children's Services (ACS)** Office of Facilities (OOF), Occupational Safety and Health Administration (OSHA) on a project to complete IPM inspections in ACS headquarters. These were initiated as a result of mouse complaints within office buildings of ACS during 2012 and continuing into 2013. Post IPM inspections recommendations developed with ACS OOF/OSHA. IPM Monitoring and progress is on- going into 2014 with bi-monthly progress meetings involving the ACS OOF unit, the contracted Pest Professional Company and the ACS Employees.

OFFICE OF VECTOR SURVEILLANCE AND CONTROL

West Nile virus Prevention and Control

The DOHMH Office of Vector Surveillance and Control (OVSC) oversees the city's West Nile virus control program. Its goal is to prevent or reduce human cases of WN virus in the City. WN virus is a serious or even fatal disease. The virus is carried and spread by mosquitoes that mainly breed in stagnant water. Since its initial discovery in New York City in 1999, WN virus has reemerged in New York City each year during the adult mosquito

season (April through October). From 1999 through 2013, a total of 302 human cases of WNV disease, including 29 deaths, have occurred in New York City.

The prevention and control efforts of OVSC for mosquitoes and WN virus are based on IPM principles. Key components of the IPM program include community outreach and education, prevention (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 following entities: New York State Departments of Health (NYSDOH), New York State Department of Environmental Conservation (NYSDEC), U. S. Centers for Disease Control and Prevention (CDC), and Other State, 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 (DITT) and the New York City Housing Authority (NYCHA).

Additional 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 Management

In 2013, the Office of Vector Surveillance and Control (OVSC) provided bed bug identification to City agencies, advice and assistance in the mitigation of bed bugs in City agency offices, and training to prevent and deal with bed bugs in the home, office and field. OVSC identifies specimens for City agencies that are suspect bed bugs. A specimen or photo of the specimen is submitted to OVSC and is identified. The submitting agency is notified of the determination. In general, about 75% of the specimens submitted are confirmed as bed bugs. In 2013, 235 specimens were submitted and 179 were confirmed as bed bugs. The identification result(s) are transmitted to the submitter, usually within an hour of receipt of the specimen. If specimen is confirmed to be a bed bug, the submitting agency will take the appropriate mitigation action.

OVSC works on an as needed basis, with City agencies to assist them in dealing with the presence of a confirmed bed bug(s). Involvement normally includes meeting with key agency staff and the pest management professional to determine the area of the office to address, best practices for mitigation and if a pesticide is justified, the selection of that pesticide to insure that it is efficacious and is compliant with LL37. It also, meets with agency staff, to discuss the situation and how it is being handled.

HEALTHY HOMES PROGRAM

DOHMH's Healthy Homes program in the Bureau of Environmental Disease Prevention collaborates with the Department of Housing Preservation and Development (HPD) on the Alternative Enforcement Program, a program designed to address NYC buildings that have several outstanding violations. The AEP is an enforcement program that provides HPD with the ability to identify the most distressed multiple dwellings and ensure that violations and the conditions that caused the violations are corrected. In many buildings, a percentage of these violations are specific to pests. Together, DOHMH and HPD developed a template for owners to provide an Integrated Pest Management Plan that addresses how they intend to resolve the property's pest problems using integrated pest management strategies. In addition, DOHMH provides educational materials along with technical support in the form of training for building owners, building maintenance staff, as well as pest management professionals on what is expected in the AEP IPM plan and best practices to address pest problems using IPM.

AGENCY IPM REPORTS

Department of Citywide Administrative Services (DCAS)

In June of 2012, DCAS launched a citywide IPM contract with Verrazano. DCAS has contracted with Verrazano to service their 55 facilities. In the summer of 2013 DCAS instituted a regular monthly service schedule with Verrazano for the interior/exterior of each building. Some locations receive services twice a month or even weekly. In addition, Verrazano services every bedbug complaint once a positive ID is confirmed from the DOHMH. Following Hurricane Sandy, DCAS increased the Verrazano contract by $70,000 to respond to pest complaints at ongoing construction sites and the remnants of the storm. This increase has paid for multiple bait stations for mice/rats along with rodent proofing of buildings, among other services. This is an ongoing effort.

DCAS has also been implementing IPM practices throughout all the five Boroughs. Building Services Maintenance staff is an integral part of this effort; they have closed many of the entry points in their buildings, as well as the many areas that are under construction. Building Services developed a Power Point presentation for DCAS staff and tenant agencies describing Pest Management services and protocols. Beginning in late 2012, DCAS Building Services instituted a recycling program in several DCAS-managed buildings, whereby individual trash baskets were converted to recycling bins. Trash is now deposited only in centralized closed containers, with very positive results on pests.

Department of Education (DOE)

The Department of Education's Pest management Unit has been working with schools to remediate rat conditions on school property by increasing inspections, treatments and by introducing new organic waste composting programs. In highly rodent active areas the DOE building facilities team has taken an IPM approach and thus emphasize the disposal of refuse as close as possible to the Department of Sanitation's scheduled pick up time as well as

keeping the areas where garbage is collected as clean as possible. DOE has installed Sealeze door sweeps to prevent rodent access into buildings and the DOE pest management unit has dedicated additional resources for monitoring and treatment. The DOE Pest Management Unit continues to follow an IPM program and offer assistance and education to all NYC schools. They provided 9,547 routine IPM inspections inside schools; an additional 604 inspections were provided for external rodent issues and DOE responded to an additional 604 complaints.

In 2013 DOE updated their bed bug protocol and streamlined the process. For FY13 the DOE received and identified over 3000 specimens as bed bugs and provided remediation in school buildings over 2500 times citywide. The DOE is also building a new database that will allow the Pest management Unit to manage pest control contracts more efficiently.

The DOE now has a "Sustainability Coordinator" in every school that has been charged with implementing their new organic waste composting programs. In 2013, 210 schools participated in organics collection in Manhattan, Brooklyn and all of Staten Island. In 2014, DOE will launch 150 additional schools in Manhattan and Brooklyn. By 2015, DOE plans to include schools in the Bronx.

Central Park Conservancy (CPC)

The CPC continues to implement a park-wide IPM program for their grounds and facilities. For CPC's rodent IPM strategy, the focus has been on using snap traps, exclusion and containerization of garbage. In 2013, the CPC updated their receptacle design to make them more resistant to pests and added recycling cans. Each of the newly designed cans is located in areas with high foot traffic and high volumes of trash. The CPC also started a pilot project with mint scented bags to assess their impact on rodent activity in the park. As a result of the CPC's emphasis on garbage management, rodenticide use has decreased from over 100 pounds of bait in 2009 and 2010 to less than 50 pounds in 2012 and 2013.

In Horticulture and Turf care CPC has emphasized the use of the least toxic product, including the use of a bio-herbicide for vegetation management in cobblestones, curbs and landscapes. This bio-herbicide has primarily replaced Glyphosate herbicide. Synthetic herbicides are now used only on an "as needed" basis for spot treatment of existing infestations. CPC also employs the maximum-use rates of Bio-fungicides partnered with minimum-use rates of synthetic fungicides to synergistically increase efficacy and reduce the rates of synthetic fungicide. As a result of this strategy, use was significantly lower in synthetic fungicide use in 2013, compared to 2012. For prevention of damage from grub species in Central Park lawns an Acelepryn insecticide was employed on 50 acres of lawns. Finally, CPC has started testing a product called "Compost Tea" that both fertilizes and prevents disease to improve the long term health of lawns and gardens.

Department of Housing Preservation and Development (HPD)

For the last three years HPD's Alternative Enforcement Program has required an IPM plan for program properties with a vermin infestation. The requirement for IPM plans was brand new to most of the privately owned housing stock in HPD's program. A template

indicating steps needed for a successful IPM plan was developed jointly with the Health Department's Healthy Homes program. Both HPD and Health staff have been involved in educational sessions for owners/managing agents, pest management companies and tenants concerning IPM.

For properties owned and managed by HPD, facility managers and the exterminator that HPD contracts with, emphasize cleaning and stoppage to all of the tenants when visiting buildings for treatment. HPD also employs a bed bug sniffing dog that is used to locate problems when bed bugs are reported to ensure proper control and elimination.

New York City Housing Authority (NYCHA)

The Housing Authority upgraded a total of 46 Community Service Aids (CSA) to full-time exterminators in 2013. All newly appointed CSA's were required to attend a two day rodent seminar given by Department of Health's Dr. Robert Corrigan. All that attended the class received 12 credits to be applied to their Exterminating license.

NYCHA continues to collaborate with DOHMH on a series of IPM initiatives including exterior rodent control, West Nile Virus prevention and bed bug training. In 2013, NYCHA also began a joint IPM Inspection program with DOHMH where a Pest Control Supervisor and a Maintenance Supervisor meets up with a DOHMH inspector in apartments with asthmatics in an effort to provide initial IPM treatment as needed and set up appointments for remedial actions as required. Technical Services has successfully completed a total of seven IPM/Asthma visits.

Department of Parks and Recreation (DPR)

IPM-based weed control initiatives at NYC parks were limited during the 2013 growing season due to Hurricane Sandy storm recovery activities. DPR intends to implement more IPM programs in 2014.

Most weed management consisted of mechanical control measures in 2013. The Bronx, Brooklyn and Staten Island Horticulture Operations have been weeding and heavily mulching all street tree beds in the dormant season to stay ahead of summer weed growth. The other boroughs are attempting the same. The limiting factor is availability of mobile crews to complete the work.

Brooklyn instituted "Weed Whacking Wednesdays" in their parks borough-wide to limit weed height. Although not a solution, it was the best use of available resources for the borough.

In Queens, DPR trialed a liquid formulation of corn gluten meal in several hardscapes, where there were brick and standard sidewalks along the perimeter of Brookville Park Plaza. The diluted corn gluten solution was applied two times. The results were unsatisfactory, as the corn gluten meal killed far fewer weeds than Glyphosate used in the same location on other

dates. More problematic was that the solution severely clogged the sprayers. The borough terminated the study when the equipment failed.

Heat treatments for weed management were determined to be unsafe. Other organic-based sprays proved to be costly and inefficient for agency operations on parklands. Although weed-suppressive perennial trials, instituted in 2009, proved inconclusive, DPR is looking to revamp the program on sites where there is an opportunity for standard controls and regular maintenance.

The Arthur Ross Citywide Nursery, located in Van Cortlandt Park in the Bronx, is an Integrated Pest Management operation. Pesticide use is limited to horticultural oils and insecticidal soaps, with active pest monitoring throughout the growing season. All weeding is mechanical. Potted plants are top dressed with wood chips to limit annual weed seed germination. The nursery stresses plant health as the first step to disease and pest prevention. In 2013 the Queens Greenhouse, located in Forest Park, used predatory mites to successfully control spider mites in their growing operations. They intend to continue this practice due to its success, refining the timing to increase successful pest management.

Parks' Central Forestry and Horticulture Division, offers training to field staff in weed identification and management, entomology, composting, and other aspects of Integrated Pest Management through its Winter Horticulture Series and Master Gardener Program.

Health and Hospitals Corporation (HHC)

HHC employs a private pest control firm to service all of their properties. This firm, Ecolab, utilizes Integrated Pest Management (IPM) techniques in HHC healthcare facilities. IPM techniques include thorough inspections and identification of pest activity, correcting structural and sanitation deficiencies that allow pests to gain entry or provide food, water and harborage and non-chemical methods of exclusion. For rodent activity, monitoring through the use of traps on the interior and exterior bait stations is employed along with detailed inspections to ensure proper exclusion of rodents.

When treatments are necessary for insect activity, Ecolab always utilizes the least-toxic forms of treatments first and the Local Law 37 guidelines for posting and recording of the applications and the approved product list. We rely on monitoring and inspection techniques along with Boric Acid based products and gel baits, when necessary, for use against cockroaches and other insects. Bed bugs are eliminated through thorough inspections and targeted applications of Steri-Fab which is a least-toxic form of insecticide. Techniques for eliminating fly activity primarily focus on improving sanitation issues that attract fly activity and uses of other non-chemical methods of elimination such as fly lights. Ecolab’s goal is to maintain strong partnerships with our Healthcare customers and do so through the use of IPM techniques that will help to provide a pest free environment.