



An Update on Integrated Pest Management in New York City (2015)

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

Contents

HISTORY AND BACKGROUND..... 3

AGENCY IPM REPORTS 6

 DOHMH: Office of Vector Surveillance and Control 6

 New York City Department of Health and Mental Hygiene: Healthy Homes Program 9

 New York City Department of Health and Mental Hygiene: Office of Pest Control Services (PCS)9

 New York City Department of Transportation (NYCDOT) 10

 Department of Citywide Administrative Services (DCAS) 10

 Department of Education (DOE) 10

 Central Park Conservancy (CPC)..... 11

 Department of Housing Preservation and Development (HPD) 11

 New York City Housing Authority (NYCHA) 12

 Department of Parks and Recreation (DPR)..... 12

 DPR’s Green Thumb/Land Restoration Project (LRP)..... 12

 Department of Environmental Protection (DEP) 12

 DEP: The Bureau of Engineering Design and Construction (BEDC) 13

 Department of Correction (DOC) 13

 Queens Library 13

 Department of Sanitation 13

HISTORY AND BACKGROUND

Introduction

In May 2005, Local Law 37 (introduced by the New York City Council as Intro 329) was signed into law. Local Law 37 (LL37) established 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).

LL37 stipulates that all City Agencies are required to submit an IPM report (beginning of each calendar year) to the Mayor and New York City Council through the Department of Health and Mental Hygiene (DOHMH). This IPM report is for the calendar year 2015 and is the tenth annual report since LL37's implementation.

Integrated Pest Management (IPM)

New York City agencies address pest control issues in various settings such as: residential units, institutional settings, parks, schools, offices, highway medians, hospitals, and vacant lots. New York City agencies continue to develop pest management strategies around IPM. IPM focuses on eliminating or controlling the underlying conditions that are conducive to pest infestation. IPM techniques include structural and behavioral modification to deny pests resources: food, water, structural openings for shelter and access to resources. When physical improvements alone are not enough to address infestation, IPM encompasses the judicious use of least hazardous pesticides. Thus, IPM is more effective and safer than pest control that relies primarily on pesticide use.

DOHMH will continue to encourage agencies to critically examine and seek all other options prior to using pesticides. Agencies are being encouraged to use pesticides as a last resort. As IPM is more widely used, the use of hazardous pesticides should decrease.

Local Law 37

Local Law 37 requires that New York City discontinue the use of pesticides with active ingredients that the Federal Environmental Protection Agency (EPA) and the State of California consider to be carcinogenic or reproductive hazards. However, certain pesticides are exempted due to their low potential for exposure or harm, or because of public health necessity. A clause in LL37 allows DOHMH to grant waivers for the use of certain pesticides that have a public health benefit. Posting notices to building occupants twenty-four hours prior to pesticide applications is required as well as detailed record keeping and reporting provisions. City agencies should critically review 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 law encourages agencies to make pesticide use reduction an ongoing pursuit.

Pest Management Committee

Local Law 37 established the Pest Management Committee (PMC) as a forum for agencies to share pest management strategies and to reduce the use of pesticide. The PMC is comprised of 15 government agencies. It is organized by DOHMH and meets twice per year.

In 2015, the PMC meeting discussed new IPM techniques, changes in the pesticide use summary report data, identification of prohibited products, IPM Toolkit, and pest proofing tips for building owners (sealant, copper mesh, screens, anti-pest brushes on boiler rooms and exterior doors).

Pesticide Use Reporting from NYC Agencies

Local Law 54 (2007) stipulates that agencies must report, on a yearly basis, the amount of pesticide applied to treated areas to DOHMH. The Health Department must then issue a summary of the pesticides used to the City Council by May (the following calendar year). New York City Pesticide Use Reporting System (NYCPURS) was created by DOHMH to track yearly reports.

In 2015, 28 agencies reported pesticide use electronically. This has increased by three since NYCPURS' formation (2006). In 2015, DOHMH issued the eighth IPM report covering calendar year 2014.

LL37 Waiver Review Committee

The Waiver Review Committee evaluates any city agency's request for exemption of hazardous pesticides. The committee is comprised of individuals from DOHMH, including licensed exterminators, health educators, environmental epidemiologists, risk assessors, and entomologists. Each member of the committee is trained in the latest IPM strategies and is well versed in LL37.

Local Law 37 (2005) authorizes The NYC Department of Health and Mental Hygiene to evaluate requests for the temporary relief of prohibitions on certain pesticides that may otherwise be illegal to use on New York City property. Waivers are granted for a period and must not exceed one year. In 2015, there were four new agency waiver renewals and nine general waiver renewals, as well as the renewal of a blanket waiver for baits and gels containing the prohibited active ingredients fipronil and hydramethylnon. Gel insecticides baits are non-volatile and function in a 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. 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 2015 is available on the Department's website (<http://nyc.gov/health/ll37>).

IPM Training given by the Department of Health and Mental Hygiene

The Department of Health and Mental Hygiene offers free IPM training to city agencies and to the public. In 2015, over 300 people participated in 21 half-day training events. Training participants included homeowners, building owners, urban gardeners and staff from city agencies. 162 rodent-resistant trash cans were given as incentives for attending training sessions.

The Department's **Rodent Academy**, provided by the Office of Pest Management Services (PCS) conducted two training seminars in 2015. The seminar lasted three days and taught preventive and proactive urban pest control techniques. Attending the training were 97 participants from several city agencies including: the New York City Housing Authority (NYCHA), the Department of Education (DOE), the Department of Parks and Recreation (DPR), the Metropolitan Transit Authority (MTA), the Department of Central Administrative Services (DCAS), the Department of Homeless Services (DHS), and pest management professionals in the private sector.

PCS also collaborated with the New York City Housing Authority (NYCHA) to offer a version of the Rodent Academy for NYCHA staff. The two-day Academy is held twice each year and focusses on in door rodent control (mice) as well as rat control at the agency's many properties. 145 participants attended the training. 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 continues the 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.

DOHMH also provides classroom and field training to exterminators and other staff who are involved with mosquito control in the City. In 2015, these trainings were provided to over one hundred participants from five city agencies and were attended by the New York State Department of Environmental Conservation (NYSDEC). The training includes: integrated mosquito management, larval mosquito control (including calibration of a backpack larvicide applicator), adult mosquito control (including calibration and operation of the truck-mounted sprayer), safety and health training for field staff, and mosquito surveillance techniques.

In 2015, DOHMH continues to provide assistance in the identification and elimination of bed bugs to City agencies and to the public. Additionally, the Department provides bed bug training to prevent infestation. Beside bed bugs, the Department provides training for other ticks, and honeybees.

The NYC Bed Bug Web Portal provides information to the public on bedbug's, facts, myths, pest management, and the Department of Health Mental Hygiene's contact information. Information pertaining to bedbugs can be found at <http://www1.nyc.gov/site/doh/health/health-topics/bedbugs.page>.

Interagency Collaboration: The Rodent Task Force

The Rodent Task Force (RTF) is made up of members from DOHMH, DEH, DCAS, Housing Preservation and Development (HPD), NYCHA, the Department of Sanitation (DSNY), the MTA, DPR, and DOE. The council makes IPM recommendations for improvements and strategies. Garbage management is a major emphasis and is the underlying cause of most rat infestations. One strategy promoted by the RTF is the use of roll-off trash compactors to store garbage before pickup in large residential developments, multifamily dwellings and outside of city-owned office buildings. For example, partially due to the efforts of the RTF, the roll-off trash compactors outside 100 Centre Street and the Tweed Courthouse were replaced, greatly reducing the number of rat burrows at those locations.

Rat Portal

The Rat Information Portal (RIP) provides information pertaining to rat exterminations (<http://nyc.gov/rats>). RIP updates as IPM techniques improve.

Health Data Portal

The Environment and Health Data Portal allows the public to view the severity of infestation, as well as the pesticides used in New York City neighborhoods (www.nyc.gov/health/trackingportal). The website reports the severity of roaches, bed bugs, mice or rat infestation and can be used to create reports, tables, charts and maps.

AGENCY IPM REPORTS

DOHMH: Office of Vector Surveillance and Control

Background

A vector transmits a disease or parasite from one animal or plant to another. Mosquitoes are vectors of West Nile virus (WNV). Female mosquitoes take blood meals, a process called hematophagy. By taking blood meals, mosquitoes spread diseases such as WNV or Zika Virus. Mosquitoes become vectors of WNV by feeding on infected birds and breed near a water source. Infected Mosquitoes can transmit WNV or any disease to its offspring. In arthropods, in particular mosquitoes, the transmission of a virus from female to offspring is called vertical transmission or transovarial transmission. A female mosquito that's a vector of a disease can vertically transmit the virus to its developing eggs.

Adult mosquitoes, search for mates, blood meals, and water sources for egg laying. The NYCDOHMH Office of Vector Surveillance and Control (OVSC) monitors standing water around New York City and asks the public to report any potential breeding environment for mosquitoes.

Mosquitoes are vectors of several viruses such as WNV, eastern equine encephalitis (EEE), western equine encephalitis (WEE), St. Louis encephalitis (SLE), La Crosse encephalitis (LAC), dengue and yellow fever and Zika Virus. OVSC collaborates with other agencies to prevent outbreaks of these pathogens.

OVSC collaborates with: New York State Departments of Health (NYSDOH), New York State Department of Environmental Conservation (NYSDEC), U. S. Centers for Disease Control and Prevention (CDC), other states, Mayor's Offices of Operations (MOO), the New York City Office of Emergency Management (OEM), Departments of Environmental Protection (DEP), the Department of Parks and Recreation (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 WNV IPM program can be found at <http://www.nyc.gov/html/doh/html/wnv/wnvhome.shtml>.

Response to the Zika Virus

The Zika virus was first discovered in 1947. Symptoms of Zika virus are fever, rash, joint pain, and conjunctivitis (red eyes). Aedes, a genus of mosquitoes, are vectors of the Zika Virus and other diseases such as dengue fever, yellow fever, chikungunya. In May 2015, Pan American Health Organization (PAHO) reported the first Zika virus infection in Brazil. The Zika Virus is being reported in the State and OVSC continues its due diligence in fighting the outbreak.

DOHMH monitors potential standing water sites and conducts larval sampling, ground Larviciding, aerial larviciding, and catch basin surveillance. DOHMH is monitoring and treating mosquito habitats. Other potential habitats are empty tires, bird baths, containers, rain gutters, and unoccupied swimming pools. Some of the new techniques and pesticides used are as follows:

1. New methods and materials: larvicides including Vectobac WDG and Methoprene (Altosid).
2. New Pesticide Application methods: Ground larviciding using truck-mounted applicators.
3. New Surveillance methods: deployment of BG Sentinel Traps, Mosquito Magnets.

West Nile virus Prevention and Control

OVSC oversee NYC’s WNV control program. OVSC’s goal is to prevent or limit WNV outbreak. Since the 1999 outbreak, WNV continues to reemerge each year. Mosquito season begins in April and persists through October. From 1999 through 2015, of the 345 human cases of WNV, there have been 39 fatalities.

OVSC continues to develop strategies in the battle against WNV, including community outreach, education, prevention (eliminating or treatment of standing water), and surveillance. OVSC attempts to use the least environmentally abrasive form of pesticide to combat mosquitoes. Efficacy of pesticides is recorded and used to anticipate subsequent applications. Elimination of standing water is instrumental in eliminating breeding sites for mosquitos. Application of larvicide is deployed in areas that can’t be drained. Other efforts in the fight against mosquitoes include urging NYC residents to monitor their property and report potential mosquito breeding sites.

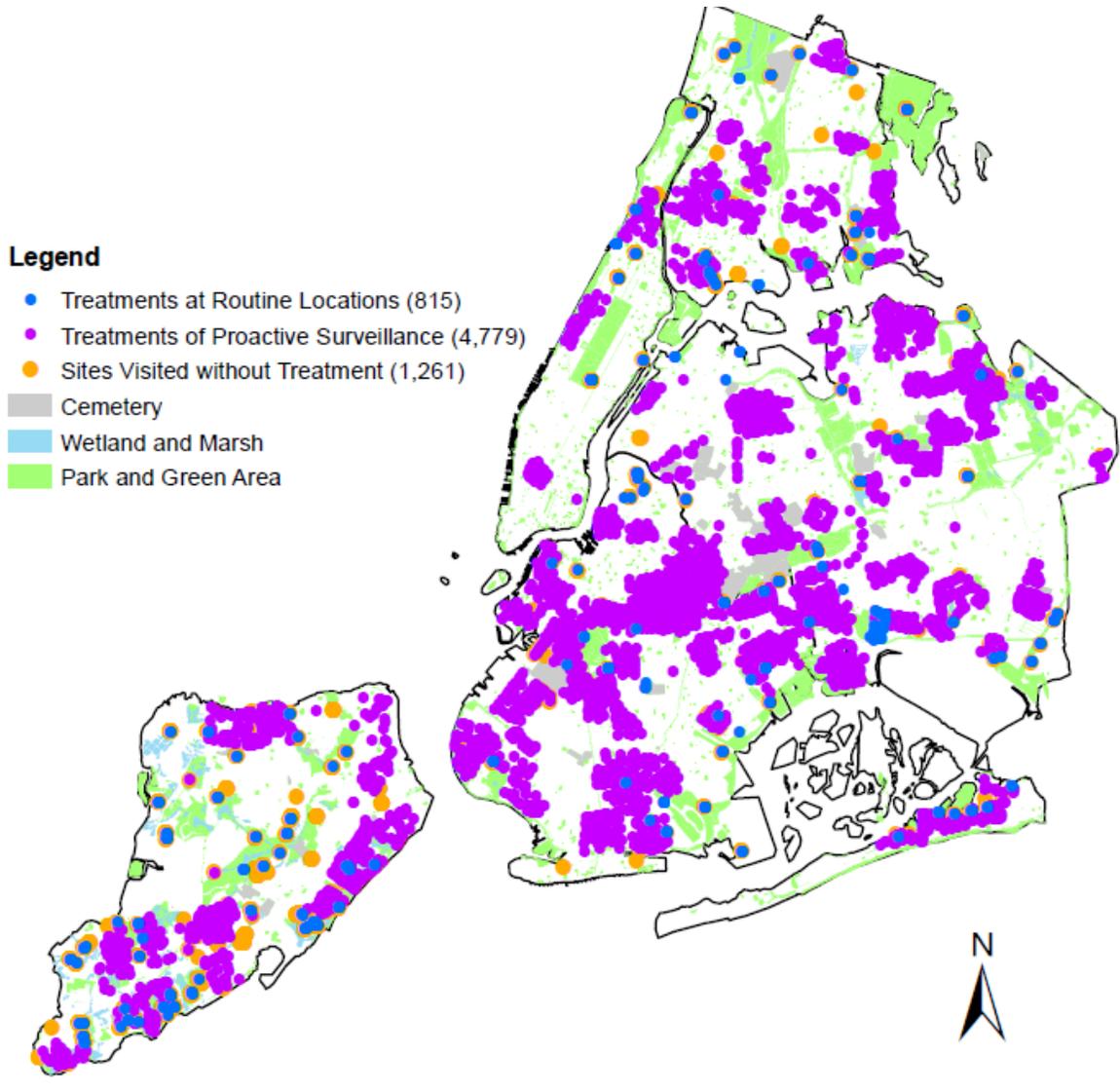
Each year there has been an upward trend in mosquito activity. OVSC monitors mosquito populations in order to anticipate subsequent year’s treatment. Contrasting 2015 and 2014, supplemental trap sites increased by 13%, mosquitoes Identified increased by 4.4%, mosquitoes tested increased by 22%, mosquito pools tested increased by 6.1%, WNV infection rate increased by 3 and WNV positive pools increased by 81.4%.

When strategizing the best method for mosquito control, OVSC evaluates mosquito species, vectors of WNV and Zika, weather, time of year, and proximity to human population. Effectiveness of adulticide application is monitored to ensure compliance with Federal, State and City guidelines. In the event that application of adulticide is required, OVSC will provide notice to elected officials, news outlet, and inform the public.

Mosquito Surveillance and Testing Summary (2012 – 2015)				
Activity	2015	2014	2013	2012
Permanent trap sites	61	61	61	52
Supplemental trap sites	200	177	182	245
Mosquito identified	141,199	135,289	105,017	120,381
Mosquito tested	120,891	99,034	82,976	87,477
Mosquito pools tested	4,397	4,144	4,136	4,414
WNV infection rate (field)	6.84	3.75	3	3.57
WNV positive mosquito pools	827	371	249	312
Mosquitoes/trap-night	40	40	30	36

City-wide Ground Larviciding, 2015

(Targeted to At-Risk/Hotspot Areas)



Larviciding

Most mosquito species spend their life cycle in larval stage. Larviciding is the killing of immature mosquitoes by applying larvicides to control larvae and/or pupae. Larvicides used by DOHMH target mosquito larvae only and have a very limited impact on other animals and people.

Mosquito Control Summary, 2015		
Type of Control	No. of Applications	Acres Treated
Aerial Larviciding	3	3,264
Ground Larviciding	2,272	159
Adulticiding	24	76,982
Catchbasin Larviciding	431,343	-

Bed Bug Identification for City Agencies

OVSC identifies specimens that are suspected as bed bugs. The alleged specimen or photo of the specimen is submitted to OVSC. In 2015, 83% of specimens submitted to OVSC were confirmed as bed bugs.

New York City Department of Health and Mental Hygiene: Healthy Homes Program

The Healthy Homes program collaborates with Housing Preservation and Development (HPD) to identify buildings in need of repair and also monitors buildings with violations through the Alternative Enforcement Program (AEP). The Healthy Homes Program works with affordable housing as well as community development corporations with Technical support and training. Healthy Homes also work with Bureau of Environmental Surveillance and Policy to monitor the homes of children with uncontrolled asthma.

New York City Department of Health and Mental Hygiene: Office of Pest Control Services (PCS)

Background

PCS' intensive rat control approach is proactive, comprehensive, and neighborhood-based, emphasizing community engagement and outreach, as outlined above in the section on the Rodent Academy and the Rodent Task Force. Through inspections, which are complaint based (311) and proactive (rat indexing and the rat reservoir program), PCS assesses neighborhoods, identifies burrows, and maps chronic rat conditions. In 2015, PCS performed nearly 119,000 inspections. PCS identifies garbage management problems (garbage is a food source for rats), as well as other violations of the Health Code, including the presence of rat burrows and conditions that provide harborage for rats such as construction debris and other clutter. Commissioner's Orders to Abate are sent to each private property owner found to be in violation, along with the "[Controlling Rats on Your Property](#)" brochure, and they are given time to address the issues. Each property is re-inspected and if violations remain, a Notice of Violation is issued returnable to the Environmental Control Board. PCS also provides extermination and clean-up services if those violations are not corrected. Exterminations are also performed in certain public properties, including parks. In 2015, PCS performed 30,383 exterminations.

New approach: reducing 'rat reservoirs'

A "rat reservoir" describes ideal rat harborage environments that promote large numbers of rats and fast reproduction. Rat reservoirs can extend for several blocks and involve sewers, multiple types of properties and parks, green streets and subways. Their existence limits the ability of any one owner or property manager to successfully eradicate rats, and contributes to infestation even where property owners effectively manage their properties. The Department was funded \$611,000 in FY2015 to pilot a program designed to "attack rat reservoirs" by identifying, studying and treating rats in pilot neighborhoods while working with community stakeholders and partner agencies to reduce conditions conducive to rats. In FY2016, the program was scaled up to 45 neighborhoods throughout the city with a total of 50 additional staff (including those added for the pilot) and nearly \$3M in new funding.

New York City Department of Transportation (NYCDOT)

The New York City Department of Transportation (NYCDOT), division of Arterial Roadway Repair and Maintenance, apply herbicides city-wide to major highways. Overgrowth of vegetation restricts visibility of roadways for motorists. Overgrowth of vegetation impedes drivers' ability to see cyclists/pedestrians. As such, application of herbicide is needed to help clear roadways from obstructive vegetation. Furthermore, herbicide applications on roadways help facilitate the safety of highway crew from on-coming motorists. The abolition of overgrowth from roadways is necessary for the environment and safety of motorists.

Noxious plants, such as poison ivy, are difficult to eliminate manually, however, herbicide application eases the process. Herbicide helps deter soil erosion and non-point source pollution. Non-point source pollution is a process that occurs when rainfall or snowmelt move through ground. The runoff picks up and carries away natural and human-made pollutants, and deposits them into lakes, coastal water, ground waters, rivers, and wetlands. The use of herbicide helps maintain and promote the growth of turf grass on slopes and subsequently controls non-point source pollution. New York Department of Transportation began adding LL37 approved preemergent herbicide. Application of preemergent herbicide has proven successful and NYCDOT has observed fewer occurrence of overgrowth of vegetation. In comparison to years past, there have been fewer occurrence of vegetation overgrowth, thus, fewer herbicides application are being applied.

Department of Citywide Administrative Services (DCAS)

DCAS introduced a citywide standardized integrated pest management (IPM) contract. The IPM program is utilized with Verrazano exterminating Corp. to service DCAS's (court and non-court) 55 facilities. DCAS continues their IPM practice throughout the five boroughs. Part of the on-going effort to reduce infestation is having pest-proof garbage disposal and DCAS has purchased three rodent-proof refuse compactors.

DCAS continues maintenance of buildings by ensuring that there is adequate closure of entry points and pest proofing areas around constructions. In addition to IPM implementation, DCAS assisted City of New York Mayors Office of Alliance in capturing feral cats.

Department of Education (DOE)

Remediation of rats on school properties is tasked by the Department of Education (DOE). DOE provided over 1,100 exterior inspections to highly infested NYC schools. To reduce the accumulation of garbage and maintain sanitary conditions, DOE collaborated with the Department of Sanitation (DSNY) to help provide prompt garbage pickups as well as regulating its garbage facilities.

In areas prone to infestation, DSNY coordinates the relocation of garbage storage. This helps

facilitate a sanitary environment and allows surveillance of the afflicted area. DOE continues to provide education and training to staff on the importance of maintaining a sanitary environment. DOE asserts the upkeep of garbage facilities can help reduce infestation.

The DOE has provided over 10,000 routine IPM inspections inside schools and has responded to over 800 emergency requests by school personnel. In 2015, the DOE received and identified over 2,500 insect specimens and as provided remediation to 2,300 schools citywide. The DOE employs a combination of NYC employees and private companies for pest management. Some of the pest management services employed by DOE are: Verrazano, Superior Pest Elimination, and Guardian. IPM and bed bug contracts are managed through DOE's database.

Central Park Conservancy (CPC)

Central Park Conservancy (CPC) continues its work on limiting food accessibility to vermin. By enforcing stern regulation on sanitation and trash management, CPC hopes to reduce rodent activity in parks. Steps taken toward this objective include strategic location of trash receptacles, trimming and clearing of vegetation, IPM training for staff members, and identification and monitoring of rat burrows.

In 2015, a total of 69 monitoring/trapping stations were dispersed through the park. The trapping stations were successful in catching 1043 rats. Nonetheless, CPC deems burrow baiting to be the most effective method for control rat infestation in the park. In 2015, 33.1 pounds of Contrac bulk meal and 1.7 pounds of Contrac blox was used in burrow baiting.

In addition to controlling rat infestation in the park, CPC is tasked in controlling agricultural infestation in Central Park. For turf and horticulture care, CPC uses bioherbicide. Bioherbicide is used to combat agricultural infestation. Burnout II (bioherbicide) usage increased from 140 GL (2014) to 548 GL (2015). This increase signifies the repeat in applications on perimeter cobblestones and curbs. Other herbicide includes synthetic herbicide and Glyphosate. Synthetic herbicide usage increased from 26.2 GL (2014) to 68.7 GL (2015). Glyphosate (broadleaf and grass herbicide) decreased from 2.8 GL (2014) to 1.5 GL (2015).

In addition to combating vermin and agricultural infestation, CPC is tasked to mitigate adverse effect of fungus on vegetation in Central Park. CPC uses fungicide to kill/ inhibit fungi/fungal spores. Some Biofungicide (microbial pesticides) used in 2015 include EcoGuard, Companion, Rhapsody, Regalia PTO, Compass and Heritage. Application of Bio-fungicide, synthetic fungicide and insecticide remain consistent to last year's application.

Finally, lawn maintenance is managed by the addition of compost tea. In 2015, 3,500 GL of compost tea were applied to new plantings and existing landscape plantings. However, no compost tea was applied to lawns in 2015.

Department of Housing Preservation and Development (HPD)

Housing Preservation and Development's (HPD) Alternative Enforcement Program (AEP) collaborated with Healthy Homes to institutionalize an integrated pest management (IPM) plan for properties with vermin infestation. HPD and Healthy Homes conjointly offered IPM training sessions for owners/managing agents, pest management companies, and tenants.

Some of the things emphasized during training sessions were the importance of cleaning and infestation stoppage (filling and/or repairing cracks). Cleaning helps limit the occurrence of infestation, whereas, stoppage impedes the re-occurrence of infestation. City owned buildings that are managed by Tenant Associations (TA) are required to have extermination contract for infestations. In addition to vermin infestation, HPD monitors bed bug complaints and employ the services of bed bug sniffing dogs.

New York City Housing Authority (NYCHA)

The New York City Housing Authority (NYCHA) aims to provide affordable housing for low to moderate income residents of NYC. In addition to providing affordable housing, NYCHA performs routine inspection and extermination of pests within its facilities. NYCHA manages 2,500 residential buildings and employs its own exterminators. NYCHA continues its collaboration with the Department of Health and Mental Hygiene on joint inspections of NYCHA buildings. Bed bugs are managed by both NYCHA exterminators and private contractors. Yearly, NYCHA use larvicide around its facility to help fend off mosquitoes. In 2015, 60 joint inspections were performed and over 70,000 exterminations of insects and rodents were performed by NYCHA exterminators. The extermination record was reported to NYS DEC.

Department of Parks and Recreation (DPR)

The Department of Parks and Recreation's (DPR) collaborated with Natural Resources, Parks Academy, Forest Restoration, Borough Operations and Green Thumb Divisions to form IPM/Pesticide Working Group. IPM/Pesticide Working Group is tasked with updating the "Standard Operating Procedures for Pesticides" manual.

With the help of DOHMH, DPR investigated invasive plants (weeds) and the effects of glyphosate-based herbicides (Roundup products). In June 2015, Caroline Bragdon (Director of Neighborhood Intervention) and DPR held a meeting discussing invasive plant protocols.

In November, 2015 DPR hired a community coordinator to work in the forestry, horticulture and natural resources division. The community coordinator's responsibility is to oversee IPM and pesticide protocols. DPR continues to offer IPM training and other courses. DPR offers a NYSDEC 30-hour test (prep and certification course) and licensed pesticide applicator recertification.

DPR's Green Thumb/Land Restoration Project (LRP)

GreenThumb (GT) supervises over 1,200 community and school gardens in New York City. The community and school gardens are inspected for safety, food production, and green space. GreenThumb's Land Restoration Project (LRP) conducts Integrated Pest management (IPM) for all field operations of community gardens. In addition to following IPM techniques, LRP performs baiting of afflicted sites when necessary.

LRP works with school and community gardens to identify insect, damage containment, fungus control, weed management, poison ivy eradication, and other treatment options. LRP's staff consists of trained and licensed applicators/technicians. GT's Quarterly Program Guide offers 2 -3 classes of IPM training. These classes are available to gardeners as well as the general public. IPM is required for garden and registration license.

Department of Environmental Protection (DEP)

In 2015, DEP Bureau of Wastewater Treatment's (BWT) pest control contractor continued to work with regulated larvicide dosage to control flying insects coming from sumps and stagnant water areas from North River Water Pollution Control Plant. To reduce harborage, BWT's Landscape Contractors removed weeds and overgrown trees around the perimeter of the facility. Larvicide was applied throughout the fourteen Water Pollution Plants and related facilities. Larvicide has become the major control method for flying insect infestations.

DEP used a methoprene based "Strike" larvicide for Infestation of flying insects. The use of this analog has been permitted by Department of Environmental Conservation (DEC) for use at the Port NYC Integrated Pest Management Update for CY2015

Richmond Water Pollution Control Plant. Applications of adulticide and larvicide have proven successful in controlling infestation, thus, there was no need further applications of the remaining tanks (2015). The success of Port Richmond facility has encouraged DEP to work on NYS DEC larvicide permit at other facilities.

In 2015, Superior Pest Elimination exterminators continued to work on spider control in the water pollution control facilities. Superior continues to manage insect, rodent and wildlife control for DEP. Superior Pest Elimination will continue to use larvicide and spider control programs to combat infestation.

DEP: The Bureau of Engineering Design and Construction (BEDC)

Pest control service at the Croton Filtration Plant is provided by All Purpose Control and K.E.B Pest Control. All Purpose Control and K.E.B Pest Control are under Bureau of Engineering Design and Construction's (BEDC) contract (CRO-312G). All Purpose Pest Control services conduct exterior pest control on topside animals such as raccoons and cats. K.E.B Pest Control Services conduct inspection twice a month. K.E.B deploys bait boxes around the facility to control rodent activity as well as glue traps to control bug infestation. Additionally, KEB treats standing water for Mosquitoes. Facilities Management & Construction (DEP facilities) are inspected monthly for infestation by Pest management professionals (PMP). PMP is tasked with eliminating or controlling infestation.

Department of Correction (DOC)

The Department of Correction's pest management is conducted by trained city specialists. The Specialist emphasizes sanitation and sealing of vermin entry points. Applications of chemicals are deployed as a last resort.

Queens Library

As of Spring 2015, the Queens Public Library has been contracted with Predator Pest Control Inc. Based on frequency of exterminations, thirteen of the most afflicted libraries in Queens were chosen to implement IPM monitoring and reporting. Thus far, reports from said libraries reflected improvements. Queens Library conducted a training course in summer of 2015 with the assistance of the Department of Health and Mental Hygiene.

The training session took place during the Custodial Operations Meeting. Queens Library Staff learned the essentials of IPM and pest control. To supplement the lecture, informative handouts (pertaining to prevention and maintenance) were distributed to library staff. More so, group sessions were held to encourage and facilitate further understanding of the importance of IPM. It was concluded that there should be mutual cooperation from library staff and maintenance crew to facilitate IPM program's success. Part of the on-going solution to renovate Queens Library's Central location is the installations of roll-off trash compactors. This incentivizes the maintenance and up-keep of loading docks and synchronously detracts the harborage of vermin.

Department of Sanitation

The Department of Sanitation (DSNY) is responsible for handling its own pest management services. DSNY has systematized a plan to ensure all 59 districts and all its support facilities are inspected within 30 days. Inspection focuses on eliminating and/or controlling conditions that promote infestation. Treatment and application of pesticides used by DSNY are subjected to IPM guidelines (Local Law 37 and Local Law 54).