**VECTOR DISEASE CONTROL INTERNATIONAL**

***NORTHAMPTON MOSQUITO CONTROL***

# 2017 ANNUAL OPERATIONS REPORT

Project Name: **City of Northampton Mosquito Control Project**

Contractor: Vector Disease Control International


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**Report prepared by:** ***Emily Hibbard, MS Entomology, VDCI's Northampton Contract Supervisor***

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## ORGANIZATION SETUP:

**City of Northampton MA, Health Department**

**Merridith O'Leary, RS…….Director of Public Health**
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**Vector Disease Control International**

**Emily Hibbard……. ……Contract Supervisor**
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***NORTHAMPTON MOSQUITO CONTROL***

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**Joe Onarato……Business Development**
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**Administrative: Merridith O'Leary, Emily Hibbard**
**Biologist: Dan Markowski, Emily Hibbard**
**Entomologist: Emily Hibbard**
**Facilities: Nolan Fernandez, Emily Hibbard**
**Information Technology: Cristina Flores**
**Laboratory: Nolan Fernandez, Emily Hibbard**
**Operations: Nolan Fernandez, Emily Hibbard**
**Public Relations: Merridith O'Leary**

**For the year of this report, the following were maintained:**
**1 Vehicle**

## VECTOR DISEASE CONTROL INTERNATIONAL

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**INTEGRATED PEST MANAGEMENT PLAN (IPM):**

**Current Services**:
Larval mosquito surveillance
Larval mosquito control
Source Reduction
Adult mosquito surveillance
Arbovirus testing
Education, Outreach & Public Education

**Definition**: Integrated Pest Management (IPM) is a comprehensive strategy of pest management to achieve reduced levels of pest control using an effective and environmentally sensitive approach. Successful IPM plans rely on a combination of practices to reduce the need for reliance on chemical pesticide. This can be accomplished by using the most current and comprehensive information on the life cycle of the pest and their interaction with the environment.

**Northampton Mosquito Control IPM plan:** The goal of VDCI's Northampton mosquito control program is to identify and reduce arboviral public health threats in the most ecologically responsible manner through continuous monitoring techniques, weekly disease testing, source reduction, increased sanitation, and the use of lowest risk pesticides when necessary. All mosquito management decisions will be made after conducting surveillance and determining that mosquito populations have reached an action threshold. Source reduction will be the primary control method and the application of larvicides to catch basin will only be applied when source reduction is not an option. The approved larvicide used will be species specific and will not harm humans, animals, birds, other insects, fish, shellfish, plants or the environment. Aerial and truck spraying for adult mosquitoes will not be employed. Private property owners will be permitted to opt out of testing and treatment.

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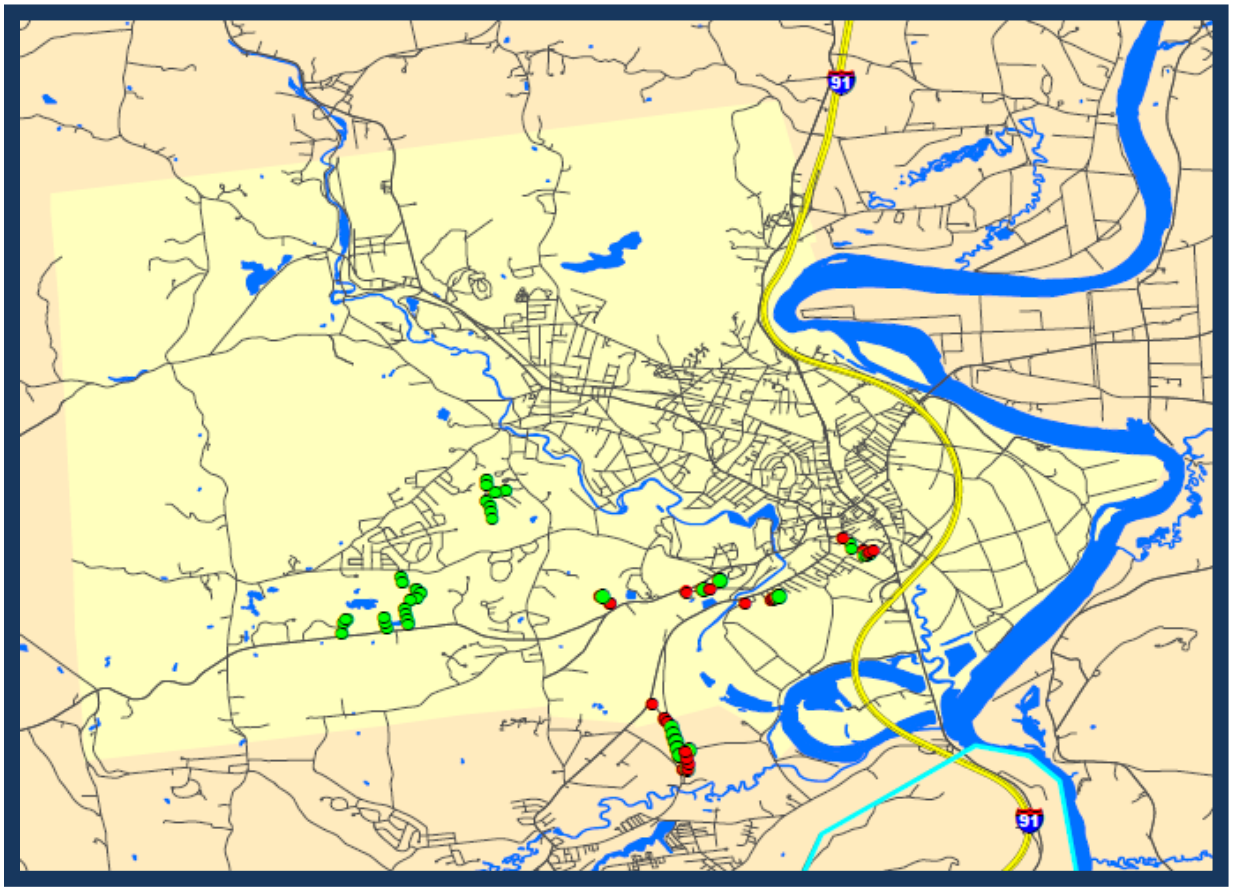
### LARVAL MOSQUITO SURVEILLANCE:

**Purpose:** The purpose of larval mosquito surveillance is to determine larval breeding zones

**Time frame**: June-October

**Areas**: Areas surveyed are public lands that could provide a breeding habitat for mosquito larvae. Examples of surveillance habitats include wetlands, marshes, flood plains, catch basins, drainage ditches, rain barrels, trash receptacles and/or any container capable of holding water.

Larval Surveillance Sites



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**LARVAL MOSQUITO CONTROL:**

**Purpose**: The purpose of this mosquito control program is to manage mosquito populations in catch basins throughout the Town to protect public health from potential arboviral threats. Catch basins are one of the primary breeding habitats for *Culex spp*; the mosquito species known to vector West Nile Virus.

**Time frame**: June – September

**Areas**: Areas treated are all authorized catch basins found to contain mosquito larvae through the use of hand applied larvicide briquets.

**Equipment used**: hand application

**Products**:

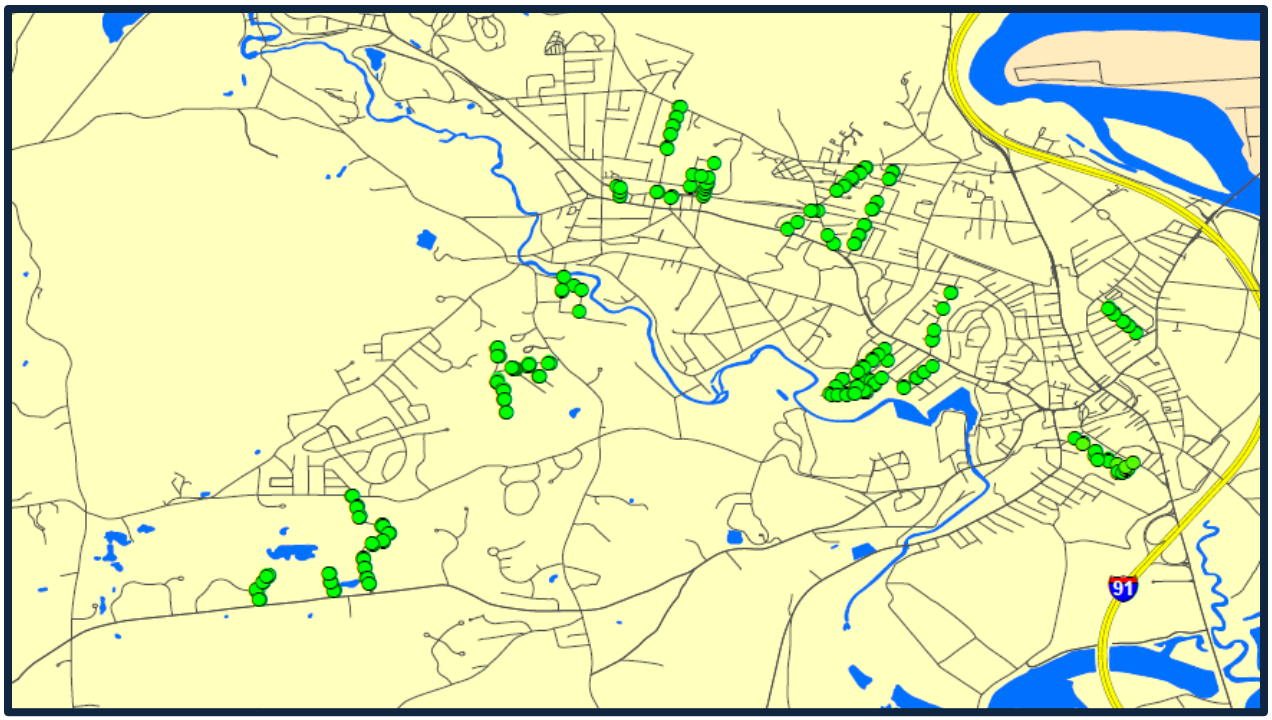
Product name: FourStar 180 briquets
EPA Reg. #: 83362-3
Application method: hand applied
Targeted life stage: larvae
Total amount applied: 100 briquets
Habitat: Catch basins

**Application rates**: 1 briquets /100sq ft.

**Total # Catch Basins Treated**: 100

**Trigger for larviciding operations:** larval dip counts

Map of treated catch basins:




**ADULT MOSQUITO CONTROL:**

N/A

## SOURCE REDUCTION:

Removal, dumping, or filling of any containers on public property that would create a larval habitat for mosquitoes including but not limited to trash/recycling bins, birdbaths, buckets, wheelbarrows, children's pools, puddles, ditches, etc.

## WATER MANAGEMENT/ DICH MAINTENANCE:

**N/A**

## ADULT MOSQUITO SURVEILLANCE:

**Purpose:** The purpose is to sample adult mosquito populations to assess efficacy of the larval control measures and to monitor for the presence of arboviruses. All adults collected are counted and identified to species.

**Time frame**: June – October

**Trap Types Used:**
Ovitraps
Gravid traps
CDC light trap with $CO_2$

**Types of adult mosquito surveillance traps:**

Gravid Trap

miniature CDC light trap with $CO_2$

## ADULT MOSQUITO SURVEILLANCE CONTINUED:

**Long term trapping sites**: Five trap sites were maintained throughout the season. These sites were chosen based on historical mosquito collection data and suspected larval habitat.

**Long term trapping sites:**

| Trap Type | Trap ID | Physical address |
|---|---|---|
| **CDC light trap with $CO_2$** | **CDC001_17** | **St Mary's Cemetery** |
| **CDC light trap with $CO_2$** | **CDC002_17** | **Ellington Ave (Gutowski Conservation)** |
| **Gravid trap** | **GVD001_17** | **Easthampton Rd** |
| **Oviposit trap** | **OVI001_17** | **Searles Auto Recycling (Easthampton Rd)** |
| **BG Sentinel Trap** | **BG001_17** | **Easthampton Rd** |

* Eggs sheets from Oviposit traps were submitted weekly to monitor for the presence of the mosquito vector *Aedes albopictus*

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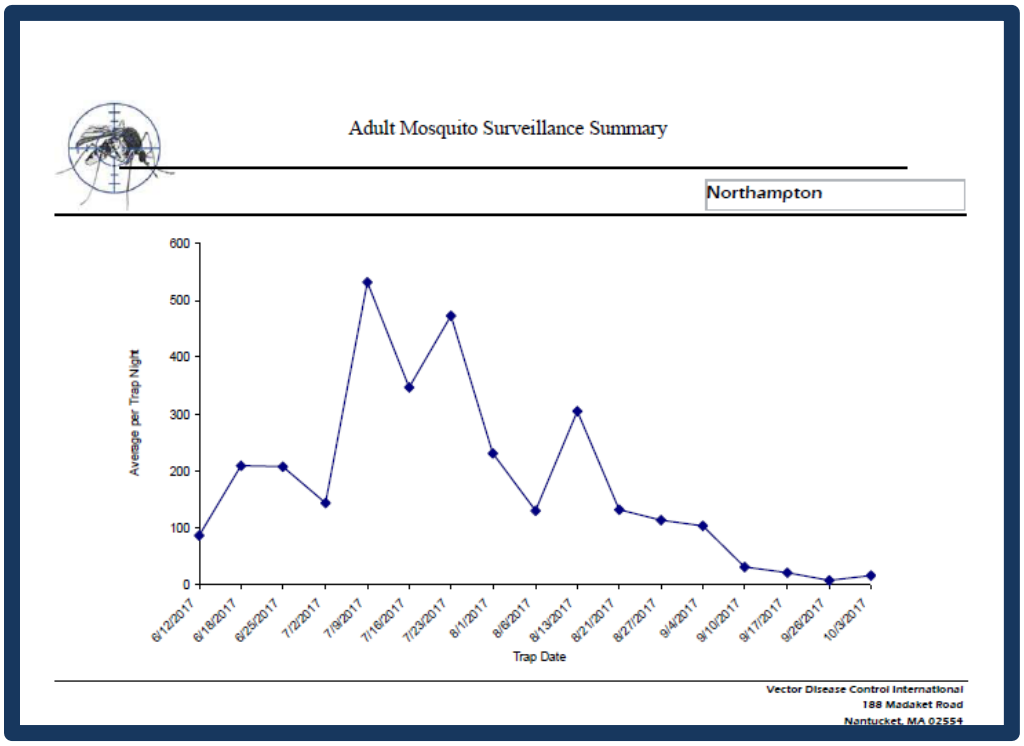
### ADULT MOSQUITO SURVEILLANCE:

**Species of concern:**

*Ae. albopictus* (none collected)
*Ae.vexans*
*Ae. cinereus*
*An. punctipennis*
*An. quadrimaculatus*
*Cq. perturbans*
*Cx. pipiens*
*Cx. restuans*
*Cx. salinarius*
*Cs. morsitans*
*Cs. melanura*
*Oc. canadensis*
*Oc. excrucians*
*Oc. intrudens*
*Oc. japonicus*
*Oc. triseriatus*
*Oc. trivittatus*
*Ps. ferox*
*Ur. sapphirina*

**Total number trapped and identified**: 9,333 mosquitoes



## ARBOVIRUS TESTING:

**Purpose:** The purpose of arbovirus testing is to identify mosquito borne diseases that may cause a threat to public health. In 2017 the Massachusetts Department of Public Health William A. Hinton State Laboratory Institute Arbovirus Surveillance Program offered the City of Northampton free mosquito submissions for testing. Mosquitoes were collected, identified and sorted by VDCI staff and shipped to the state laboratory for arboviral testing of West Nile Virus and Eastern Equine Encephalitis. Submissions were accepted and testing was preformed from June 12, 2017 through September 21, 2017.

**Testing**: 122 pools totaling 4,769 mosquitoes were tested for arboviruses using RT-PCR analysis.

**Results**: 14 out of 122 pools tested positive for WNV. No pools tested positive for EEE. No human, avian, or equine illnesses were reported in 2017 from the City of Northampton

**Oviposit Trap Results:** Egg sheets from Oviposit Traps were collected and submitted to DPH for species analysis. The purpose of the traps was to monitor for the presence of *Ae. albopictus* eggs. Fifteen eggs sheets were submitted for rearing to larvae. One eggs sheet collected on 6/12/17 containing 61 eggs successfully reared out one *Ae albopictus* larvae. In response to these findings the State Lab Institute deployed additional traps on 7/19/17, however no *Ae. albopictus* larvae were reared out from the 8 batches submitted for rearing.

## DATA:

Data collected and maintained in the VDCI database and includes:

Species identification
Species distribution
Population densities
Mapping
Arbovirus Testing Results

Reports and updates were submitted weekly to the Northampton Health Department

## EDUCATION, OUTREACH, AND PUBLIC COORDINATION:

Educational materials are available through the Northampton Health Department website, the VDCI website as well as the MA Dept. of Public Health website:

http://vdci.net/index.php

http://northamptonma.gov/1597/Mosquito-Information
http://northamptonma.gov/CivicAlerts.aspx?AID=240

www.mass.gov/dph/mosquito

## INFORMATION TECHNOLOGY:

All data collected was maintained in the VDCI Great Mechanism Database. GPS equipment was used for all site visits and GIS mapping is available through VDCI's GIS department.

## REVENUES & EXPENDITURES:

Privately funded by the City of Northampton

## SERVICE REQUESTS:

N/A

## EXCLUSIONS:

N/A

## SPECIAL PROJECTS:

N/A

## CHILDREN AND FAMILIES PROTECTION ACT:

This program is not impacted by the Children and Families Protection Act

## NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PROGRAM:

N/A

**GENERAL COMMENTS:**

N/A