

MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT



2014 Year of Report

Date of Report: 1/20/2015

Project/District Name: **East Middlesex Mosquito Control Project**

Address: 11 Sun St.

City/Town: Waltham

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Report prepared by: *David Henley*

NPDES permit no. **MAG87A020**

If you have a mission statement, please include it here: The East Middlesex Mosquito Control Commission (the Commission) represents the interests of the participating communities and their residents in providing guidance and oversight to the East Middlesex Mosquito Control Project (the Project). The Commission strives to ensure that the member communities receive services that are consistent with applicable laws and justified by the tenets of public health, vector control, environmental safety and fiscal responsibility. Integrated mosquito management services provided by the Project and approved by the Commission will be based on the State's Generic Environmental Impact Report on Mosquito Control in Massachusetts, the Massachusetts Arbovirus Surveillance and Response Plan and the policies of the State Reclamation and Mosquito Control Board.

The Project's integrated mosquito management plan will consist of mosquito surveillance, larval mosquito control of wetlands and catchbasins, adult mosquito control, wetlands management/ ditch maintenance and public education.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Executive Committee: Leonard Izzo, Chair Wellesley; Gerard Cody, Lexington; John McNally, Newton; Ruth Clay from Wakefield and Melrose; and the representative to be determined from Sudbury. Other Commission members include Christine Bongiorno, Arlington; Heidi Porter, Bedford; Patrick Maloney, Brookline; Christine Mathis, Burlington; Wendy Robinson, Cambridge; Anthony Kiszewski, PhD, Concord; Chris Webb, Malden; Kelly Pawluczzonek, Maynard; Karen Rose, Medford; Martin Fair, North

Reading; Tom Creonte, Waltham; Julia Junghanns, Wayland; Richard Sullivan, Weston; and Jennifer Murphy, Winchester.

Please list the Supt./Director's name: David Henley

Please list the Supt./Director's contact phone number: 781-899-5730

Please list your Asst. Supt./Asst. Director's name: Michael Bryant

Do you have a website? Yes If yes, please list the web address here: [http://
https://sudbury.ma.us/emmcp/](http://https://sudbury.ma.us/emmcp/)

Please list your staffing levels for the year of this report:

Full time: 5

Part time: 1

Seasonal: 7

Other: (please describe)

Please break these down into the following areas:

Administrative staff: Superintendent and part-time Administrative Assistant

Field staff: Assistant Superintendent, Entomologist, Skilled Equipment Operator - Grade one, Skilled Equipment Operator - Grade 2, and seven full-time seasonal catchbasin applicators.

Please check off all that apply, and list employee name(s) next to each category:

Public relations David Henley

Information technology

Entomologist Douglas Bidlack, PhD.

Wetland Scientist

Biologist

Education

Laboratory

Operations Full-time: Michael Bryant, Christopher Gagnon and Michael Sweder.

Seasonal: Matthew Ciommo, Leo Cody, Jon Daigle, Gregory Hegel, Cameron Kelley, Konrad Musialowski and Joseph Sandore.

Facilities Michael Bryant and David Henley

Other (please list)

For the year of this report, we maintained:

7 vehicles

1 modified wetland equipment (list type) Linkbelt 75 Spin Ace track mounted excavator

2 ULV sprayers (list type) 2 Clarke Cougar Smartflow with radar.

Larval control equipment (list type)

Other (please be specific):

Comments: _____

How many cities & towns in your service area? 26

Please list: Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Concord, Everett, Framingham, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, North Reading, Reading, Sudbury, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester. In addition, the East Middlesex Mosquito Control Commission and the Suffolk County Mosquito Control Commission agreed to extend a Memorandum of Agreement to share administrative services.

Any changes to your service area this year? Choose one

Please list cities/towns added or removed

***Please attach a link to a map of your service area if possible.**

INTEGRATED PEST MANAGEMENT (IPM):

DEFINITION: a comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but is not limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.

Please check off all of the services that you currently provide to your member cities and towns as part of your IPM program; details of these services are in the next sections.

- Larval mosquito control
- Adult mosquito control
- Source reduction
- Ditch maintenance
- Open Marsh Water Management
- Adult mosquito surveillance
- Education, Outreach & Public education
- Research
- Other (please list): On occasion the Project receives requests to review plans for stormwater runoff at developments planned adjacent to wetlands or for underground stormwater treatment devices.

Comments: _____

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: This program is focused on controlling larvae of spring and summer floodwater species and Culex species. Spring floodwater species are controlled because they are aggressive mammal biting species that are active during the late spring and early summer, when residents are frequently involved in youth sports, recreation activities and outdoor maintenance projects. Summer floodwater species are controlled because they are aggressive mammal biting species and possible EEE human vectors. Culex mosquitoes are controlled because they are considered enzootic and human vectors for West Nile Virus.

Please give the time frame for this program: Spring floodwater mosquito larvae are controlled from late March through May. Summer floodwater mosquito larvae are controlled from late May through September.

Describe the areas that this program is used: Intermittently flooded wetlands, stormwater detention basins, catchbasins, neglected swimming pools and other water holding containers.

Do you use:

Ground applied (includes hand, portable and/or backpack)

Helicopter applications

Other (please list):

Comments: _____

What products do you use in – (please use product name and EPA#)

Wetlands: VectoBac G- EPA #73049-10, VectoBac 12AS - EPA #275-102, Altosid Pellets - EPA #2724-448

Catch basins: Vectolex WSP - EPA #73049-20, Spheratax SPH WSP - EPA #84268-2, Altosid Pellets - EPA #2724-448, Altosid Pellets WSP - EPA #2724-448, Altosid Ingot XR Briquets - EPA #2724-421.

Containers: Spheratax SPH WSP - EPA #84268-2, Vectolex WSP - EPA #73049-20, Altosid Pellets - EPA #2724-448.

Other (please list):

Please list the rates of application for the areas listed above:

Wetlands: VectoBac G was applied by helicopter at a rate of 5 lbs. per acre. VectoBac 12AS was applied by portable sprayers at rates of 8 oz. per acre and 12 oz. per acre. Altosid Pellets were applied at rates of 2.5 lbs. per acre to 5 lbs. per acre.

Catch basins: Vectolex WSP, Spheratax SPH WSP and Altosid WSP were applied at a rate of 1 pouch per catchbasin. Altosid Ingot XR Briquets were applied at the rate of 1 briquet per catchbasin. Altosid Pellets were applied at a rate of 8 grams per catchbasin.

Containers: Vectolex WSP and Spheratax WSP were applied to neglected swimming pools at the rate of 1 pouch per 50 square feet. Altosid Pellets were applied to neglected swimming pools, rimless tires and other water holding containers at rates of 2.5 lbs. per acre to 5 lbs. per acre.

Other:

What is your trigger for larviciding operations? (check all that apply)

- Larval dip counts – please list trigger for application: 3 larvae per 10 samples
- Historical records
- Best professional judgment

Comments: Larval control in wetlands is funded by 25 communities. Helicopter larval control applications are funded by 18 communities. Catchbasin larval control is funded by 22 communities. Larval control at neglected swimming pools is done in cooperation with municipal health departments. Altosid Pellets, Altosid Pellets WSP and Altosid Ingot XR Briquets are applied to catchbasins during the month of June as a pre-emergence treatment to control Culex larvae. Altosid Pellets, Altosid Pellets WSP, Altosid Ingot XR Briquets, Spheratax SPH WSP and Vectolex WSP were used to control Culex larvae in catchbasins in July, August and September.

***Please attach a link to maps of treatment areas if possible.**

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To reduce the number of mammal biting mosquitoes, EEE human bridge vector mosquitoes and secondary WNV human bridge vector mosquitoes.

Please give the time frame for this program: June through September

Describe the areas that this program is used: Suburban residential neighborhoods situated near wetlands that produce mosquitoes and having a relatively dense configuration of streets.

Do you use:

- Truck applications**
- Portable applications**
- Aerial applications**
- Other (please list):**

Comments: _____

Please list the names of the products used with EPA #:

- 1). Anvil 10 + 10, EPA #1021-1688-8329
- 2). Mavrik Perimeter, EPA #2724-478
- 3).
- 4).
- 5).
- 6).

Please list your application rates for each product:

- 1). Anvil 10 + 10 is applied at .0024 lbs. per acre
- 2). Mavrik Perimeter is applied at .2 to .5 fluid oz. in 5 gals. of water per 1,000 square feet
- 3).
- 4).
- 5).
- 6).

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas

In 2014 the maximum number of times that wide area adult mosquito control occurred in any neighborhood was three times. The shortest interval between applications was 13 days.

What is your trigger for adulticiding operations? (check all that apply)

- Landing rates - please list trigger for application
- Light trap data - please list trigger for application 100 - 200 mammal biting mosquitoes.
- Complaint calls - please list trigger for application
- Arbovirus data
- Best professional judgment

Comments: Scheduling adult mosquito control applications is based on mosquito population data. Spraying in the vicinity of an EE or West Nile Virus isolation or human case may be done if the community where the isolation occurs supports the application. Citizen requests for control are regarded as supplemental data that may influence the shape of the area where control is scheduled.

***Please attach a link to maps of treatment areas if possible.**

SOURCE REDUCTION

Do you perform source reduction methods such as tire/container removal? Yes

If yes, please describe your program:

During ditch maintenance activities, tires may be removed from work areas, if the municipality where the work is being done is willing to accept the tires and fund their disposal. In Everett, the Project worked with the City's Environmental Services Dept. to locate and remove a large number of tires that had been discarded in close proximity to the New England Produce Center. The purpose of the effort was to reduce potential *Aedes albopictus* habitats in the vicinity of businesses involved in interstate commerce.

What time frame during the year is this method employed? Ditch maintenance activities are conducted from September through March.

Comments: _____

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
- Saltmarsh

If yes, please describe: Ditch maintenance is done using either a LinkBelt 75 track mounted excavator or hand tools. When planning ditch maintenance activities, the protocols contained in the Massachusetts Best Management Practice and Guidance for Freshwater Mosquito Control are followed.

Please check off all that apply INLAND DITCH MAINTENANCE:

- Hand tools**
- Mechanized equipment**
- Other (please list):**

Comments: _____

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- Hand cleaning**
- Mechanized cleaning**
- Other (please list):**

Comments: _____

Please give an estimate of cumulative length of ditches maintained from the list above
INLAND:

Hand cleaning 3,938'

Mechanized cleaning 2,110'

Other (please list):

Comments: In September the Project worked cooperatively with the Framingham DPW and Conservation Commission to maintain a stormwater detention basin located adjacent to a levee along the Sudbury River. The maintenance involved removing 6" to 12" of sand, sediment and organic debris to re-establish the original elevation of the detention basin. The Army Corps of Engineers requested that the detention basin maintenance be done to prevent deterioration of the levee walls. This preventative maintenance was done to limit the possibility of future flooding caused by leaks in the levee walls.

Please give an estimate of cumulative length of ditches maintained from the list above
SALTMARSH:

Hand cleaning

Mechanized cleaning

Other (please list):

What time frame during the year is this method employed? Most inland ditch maintenance work is done from September through March.

Comments: _____

***Please attach a link to maps of ditch maintenance areas if possible.**

MONITORING (Measures of Efficacy)

Please describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: Pre-application surveys were conducted at 83 sites. Post-application surveys were conducted at 21 sites. ArcView GIS maps of targeted wetlands are prepared prior to the application. Ag-Nav maps recorded during the application are reviewed to determine coverage.

Larvicide – catch basins: Pre-application larval surveys are done in June to determine the appropriate time to begin using *Bacillus sphaericus*. Random pre-application and post-application larval surveys are undertaken during July, August and September. Random monitoring of paint marks on

catchbasins left by applicators is conducted to evaluate coverage of treated areas.

Larvicide-hand/small area Pre-application surveys are conducted prior to all applications. Random post-application surveys are conducted.

Ground ULV Adulticide: Pre-application adult mosquito surveys using CDC light traps are done. Subsequent adult mosquito surveys are conducted to determine if additional ground ULV adulticiding is needed.

Source Reduction:

Open Marsh Water Management:

Other (please list):

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy, (pre and post data) and resistance testing (if any): **For aerial larval control pre-application larval dip counts are undertaken with a minimum of 30 dips per site. Random post-application dip counts with a minimum of 30 dips at sites where monitoring occurs. In addition the applicator is supplied with ArcView GIS maps of targeted wetlands that are used in the applicator's AgNav systems. The AgNav maps recorded during the application are reviewed following the application to evaluate the coverage of treated areas.**

At catchbasins, sampling using a Landers Ladle is conducted during the early summer to determine when the presence of Culex larvae becomes common. Two samples using a Landers Ladle are taken at each sampled catchbasin.

Applicators are required to mark each catchbasin with water soluble marking paint, when they apply a larvicide. Monitoring of paint marks left on catchbasin grates by applicators is conducted to evaluate coverage. The efficacy of Bacillus sphaericus applications is monitored by random sampling using a Landers Ladle.

For small area wetland larval control, applicators are required to do a minimum of 10 dips and find a minimum of 3 larvae before a larvicide can be applied. Random post-application surveys are conducted by the Operations Manager.

Before adult mosquito control is scheduled, three to five co2 baited light traps are used to monitor mosquito populations in a community. A minimum of 100 to 200 mammal biting mosquitoes must be collected at a trap site before spraying will be scheduled in neighborhoods near a trap site. The variation in the minimum trap collection size to justify spraying is related to the normal mosquito collections found at a site. Trap collections below the minimum number result in a determination that spraying does not need to be scheduled in that neighborhood or re-scheduled if the neighborhood has recently been sprayed.

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? No

If yes, please describe:

Please give an estimate of total square feet or acreage:

What time frame during the year is this method employed?

Comments: _____

***Please attach a link to maps of OMWM areas if possible.**

ADULT MOSQUITO SURVEILLANCE

Do you have an adult mosquito surveillance program? Yes

Please list the number (not location) of MDPH traps in your service area: MDPH did not use survey traps in the East Middlesex MCP area in 2014.

Please check off all the types of surveillance that apply to your program:

- | | |
|---|---------------------------------|
| <input checked="" type="checkbox"/> Gravid traps | |
| <input type="checkbox"/> Resting boxes | |
| <input type="checkbox"/> CDC light traps | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO ₂ | <input type="checkbox"/> Canopy |

Other (please describe): BG Sentinel traps were used to monitor for Aedes albopictus.

Please describe the purpose of this program: The primary purposes are to measure populations of mammal biting mosquito species and populations of species considered enzootic or bridge vector species for West Nile Virus and EEE. The data is used to evaluate the need for control. As funding is available, Culex species, Cs. melanura and other potential human bridge vector species are submitted to DPH.

Do you maintain long-term trap sites in any of your areas? Yes

If yes, please describe how you chose these long-term sites. In most municipalities there are 3 to 5 trap sites. In municipalities with significant wetland acreage, light trap sites are located in yards that are in close proximity to major mosquito habitats for spring and summer floodwater mosquitoes, Cq. perturbans and Cs. melanura. In densely populated areas without significant wetland acreage, gravid trap sites are placed in yards or municipal properties with the goal of providing geographic spacing within the community. Light traps and gravid traps are also located near properties where people or horses are believed to have contracted EEE or West Nile Virus in the past.

Please check off the species of concern in your service area:

- | | |
|--|---|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</i> |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" type="checkbox"/> <i>Oc. excrucians</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input checked="" type="checkbox"/> <i>Oc. fitchii</i> |
| <input checked="" type="checkbox"/> <i>An. punctipennis</i> | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input checked="" type="checkbox"/> <i>Oc. punctor</i> |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input type="checkbox"/> <i>Oc. sollicitans</i> |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i> | <input type="checkbox"/> <i>Oc. stimulans</i> |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i> | <input type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input checked="" type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i> | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i> | <input checked="" type="checkbox"/> <i>Ps. ferox</i> |
| <input checked="" type="checkbox"/> <i>Oc. abserratus</i> | <input type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i> | |

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? 10

Please check off the arboviruses found in your area in the past 5 years:

- West Nile Virus
 Eastern Equine Encephalitis
 Other Please list:

Did the above listed diseases cause human or horse illnesses? Yes

Please explain: In 2014, four residents contracted West Nile Virus. In 2012 there was 1 resident who contracted EEE and 12 residents who contracted West Nile Virus. In 2011 there were 4 residents who contracted West Nile Virus. In 2010 there was one resident who contracted West Nile Virus.

At what arbovirus risk level did the year begin in your area? (If more than one please list)

WNV: All communities began the year with a low risk for West Nile Virus
EEE: Concord, Framingham, North Reading, Reading and Sudbury started the year at low risk. Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Everett, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester began the year at remote risk.

At what arbovirus risk level did the year end in your area? (If more than one please list)

WNV: Arlington, Belmont, Brookline, Cambridge, Everett, Malden, Medford, Melrose, Newton, Reading, Wakefield, Watertown and Winchester finished the year at moderate risk. Bedford, Burlington, Concord, Framingham, Lexington, Lincoln, Maynard, North Reading Sudbury, Waltham, Wayland, Wellesley and Weston finished the year at low risk.

EEE: Concord, Framingham, North Reading, Reading and Sudbury finished the year at low risk. Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Everett, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester finished the year at remote risk.

What time frame during the year is this method employed? Monitoring mosquito populations using co2 baited light traps typically begins in late May and continues through September. Monitoring using gravid traps typically begins in late June or early July and continues through September. Sending mosquito specimens to the State Lab to be tested for West Nile Virus typically begins in late June or early July and continues through September.

Comments: _____

***Please attach a link to maps of surveillance areas if possible.**

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program program? Yes

If yes, please describe: The Project's public education program is designed to develop awareness within the public and private sectors as to their roles in mosquito control. The Project serves as a resource to residents, municipal officials and the local media on controlling mosquitoes, larval mosquito habitats and mosquito borne diseases.

Please check off all that apply:

- School based program
- Website
- PR brochures/handouts
- Community events
- Science fairs
- Meeting presentations
- Other (please describe): The Project sends out press releases to community and regional newspapers related to aerial Bti applications, ground based adult mosquito control applications, personal protection from mosquitoes and preventative actions that homeowners can take to reduce mosquito development on their property. Notices on the pesticide exclusion process and notices on ground based adult mosquito control are

regularly posted on municipal websites. Memos and reports on mosquito control activities, local disease risk and other items of interest are sent to municipal officials from each participating community. Annual reports and appropriation requests that include schedules and costs of mosquito control services are sent to participating communities. The Superintendent upon request attends Board of Health and Conservation Commission meetings. Project representatives are periodically interviewed by newspaper, radio, television and local access cable reporters. A previously recorded episode of the PBS program, Curious George, that includes Project representatives describing mosquito biology to Newton elementary school students is periodically aired

Please give an estimate of attendance/participants in this program:

Please list some events you participated in for the year of this report: David Henley gave the following presentations: "Mosquito control in Arlington" to the staff of the Arlington Health Dept., "West Nile Virus, Aedes albopictus, Culex mosquitoes and the need to manage water holding containers" to the staff of the Everett Inspectional Services Dept., Mosquito spraying may have killed bees - A tale of media bias and Linden Trees (co-authored by Douglas Bidlack) at the Northeastern Mosquito Control Association Annual Meeting.

What time frame during the year is this method employed? Throughout the year

Have you performed any research projects, efficacy, bottle assays, etc.? Yes

If yes, please elaborate on your research projects: David Henley and Douglas Bidlack conducted an investigation into the death of bumblebees found under 3 linden trees in front of St. Joseph's School in Wakefield.

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Yes

If yes, please elaborate on your collaborations this past year: Douglas Bidlack advised HeeJung Ko, a UMass Boston biology major who conducted research on Culex mosquito larvae collected from catchbasins and their development under varying water temperatures. The Project provided information to a Tufts University student who was doing a paper on the public involvement in mosquito spraying. The Project provided information to a historian from Cambridge who was investigating an outbreak of yellow fever in the Fresh Pond area in 1907.

Please provide a list of technical reports, white/grey papers, publication in journal or trade magazines, etc.

Does your staff participate in educational opportunities? Yes

If yes, please list the training and education your staff received this year: Six employees attended the annual meeting of the Northeastern Mosquito Control Association (NMCA). Five employees attended the NMCA Field Day. Four employees attended a pesticide workshop sponsored by Univar. David Henley attended a Cooperative Extension workshop entitled "Pesticides and Pollinators" given by Anne Averill, PhD. of the University of Massachusetts, Amherst. David Henley accompanied 2 staff members from the Norfolk County Mosquito Control Project to meet with Waheed Bajwa, the Executive Director of New York City's Office of Vector Surveillance and Control who reviewed the New York City mosquito control program. David Henley attended a Vector Control Forum with presentations by AMCA Technical Director Joseph Conlon and Hotze Wijnja of the Mass. Dept. of Agricultural Resources.

Please list the certifications and degrees held by your staff: Mike Bryant, Chris Gagnon, David Henley and Mike Sweder are Certified Pesticide Applicators. Matthew Ciommo, Leo Cody, Jon Daigle, Gregory Hegel, Cameron Kelley, Konrad Musialowski and Joseph Sandore are Licensed Pesticide Applicators. Mike Sweder has a Hoist Operator's License. David Henley has a B.B.A in Management, Mike Bryant has an A.B. in Turf Management, Doug Bidlack has a Ph.D. in Entomology, an M.S. in Entomology and Plant Pathology and a B.S. in Biological Sciences. Chris Gagnon has a B.S. in Wildlife Biology. Mike Sweder has a M.S. in Environmental Health and Safety and a B.S. in Entomology.

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? Yes

If yes, please describe: Bacillus sphaericus used to control Culex mosquitoes in catchbasins and neglected swimming pools is a live bacteria that recycles in water that supports Culex larvae.

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators? no

Please check off all that apply:

- Predatory fish
- Predatory invertebrates
- Other (please describe): Bacillus sphaericus

What time frame during the year is this method employed? July, August and September

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that applies):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe):

Please describe your capabilities in these areas: Databases are maintained on adult mosquito populations, mosquito habitats, larval mosquito surveys, pesticide usage and ditch maintenance. The Project is equipped with 2 desktop computers and 1 laptop computer. The Project uses aerial photography of the district with delineated wetlands as a layer in our ArcView software. GIS aerial photos are used to identify property owners when planning ditch maintenance activities and to confirm the location of endangered species habitats and pesticide exclusions. Shape files are provided to the helicopter contractor, which uses the files in an AgNav system to guide aerial larval control applications over targeted wetlands.

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities: ArcView GIS is used in our wetland database, helicopter larval control program and our wetlands management program.

Please describe any changes/enhancements in this area from the previous year: GIS work is done with the assistance of the Field Supervisor from the Suffolk County Mosquito Control Project.

Comments: _____

REVENUES & EXPENDITURES

Please give a concise statement of revenues & expenditures for the prior fiscal year ending June 30.

FY 2014 regular and supplemental appropriations received:\$692,775.66

FY 2014 expenditures:\$683,901.16

List each **member municipality along with the corresponding (cherry sheet) funding assessment** dollar amount for the prior fiscal year.

Comments: The following are the FY 2014 regular appropriations from the communities participating in the East Middlesex MCP: Arlington - \$6,217, Bedford - \$37,375, Belmont - \$16,400, Brookline - \$12,227, Burlington - \$39,639, Cambridge - \$19,911, Concord - \$20,000, Everett - \$12,000, Framingham - \$49,020, Lexington - \$24,647, Lincoln - \$10,300, Malden - \$19,567, Maynard - \$13,050, Medford - \$22,255, Melrose - \$11,542, Newton - \$40,525, North Reading - \$46,604, Reading - \$36,300, Sudbury - \$45,870, Wakefield - \$17,420, Waltham - \$31,863, Watertown - \$15,159, Wayland - \$22,285, Wellesley - \$18,850, Weston - \$37,677 and Winchester - \$15,200.

PESTICIDE USAGE

Please total your pesticide usage with information from your Mass. Pesticide Use Report, WNV Larvicide Use records and contracted pesticide applications. Applications methods include; hand/backpack, aerial, ULV, mistblower, other (please explain)

Product Name: Altosid Pellets
EPA Reg. #: 2724-448
Application method: hand applied
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 334 lbs.
Comments: _____

Product Name: Altosid Pellets WSP
EPA Reg. #: 2724-448
Application method: hand applied
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 164 lbs.
Comments: _____

Product Name: Altosid Ingot XR Briquets
EPA Reg. #: 2724-421
Application method: hand applied
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 257 lbs.
Comments: _____

Product Name: Spheratax SPH WSP
EPA Reg. #: 84268-2
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 56 lbs.
Comments: _____

Product Name: Vectolex WSP

EPA Reg. #: 73049-20
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 1,151 lbs.
Comments: _____

Product Name: Vectobac 12AS
EPA Reg. #: 275-102
Application method: portable sprayer
Targeted life stage: Larvae
Total amount of concentrate applied: 18 gals.
Comments: _____

Product Name: Vectobac G
EPA Reg. #: 73049-10
Application method: helicopter
Targeted life stage: Larvae
Total amount of concentrate applied: 11,777 lbs.
Comments: _____

Product Name: Anvil 10+10
EPA Reg. #: 1021-1688-8329
Application method: truck mounted aerosol sprayer
Targeted life stage: Adult
Total amount of concentrate applied: 79 gals.
Comments: _____

Product Name: Mavrik
EPA Reg. #: 2724-478
Application method: backpack mistblower
Targeted life stage: Adult
Total amount of concentrate applied: 1.17 oz.
Comments: _____

LARGE AREA EXCLUSIONS

Do you have large areas of pesticide exclusion, such as estimated or priority habitats?
Yes

If yes, please explain, and attach maps or a web link if possible. Great Meadows National Wildlife Refuge and the Assabet River National Wildlife Refuge manage large tracts of wetland acreage in Bedford, Concord, Lincoln, Maynard, Sudbury and Wayland that is excluded from larval and adult mosquito control pesticide applications. The only exception occurs when the Refuge Manager determines that there is an imminent risk from mosquito borne disease and issues a permit. The Sudbury Valley Trustees, a

private land trust that owns wetlands in Concord, Framingham, Sudbury and Wayland has excluded their property from pesticide applications.

Assabet River National Wildlife Refuge, topo map: www.farnwr.org/maps1.html

Great Meadows National Wildlife Refuge, map:

http://fws.gov/refuge/great_meadows/map.html

Sudbury Valley Trustees, trail maps: <http://www.sudburyvalleytrustees.org/maps>

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? Yes

If yes, please elaborate Periodically municipal officials will request that plans for subdivision stormwater runoff be reviewed to determine the likely impact on mosquito development.

Do you work with DPW departments or other local or state officials to address stormwater systems, clogged culverts or other areas that you have identified as man-made mosquito problem areas? Yes

If yes, please elaborate: Municipal officials have requested that we identify and remove excess sedimentation and debris that is obstructing ditches and culverts. In 2014, the Town of Framingham requested that we maintain a stormwater detention system located adjacent to a levee along the Sudbury River. The Army Corps of Engineers requested that the maintenance be done to prevent deterioration of the levee walls. This preventative maintenance was done to limit the possibility of future flooding caused by leaks in the levee walls.

Have you worked with these departments on long term solutions? Yes

If yes, please elaborate: Our goal in reviewing site plans and subdivisions is to divert water away from wetlands to reduce the amount and duration of standing water following large rain events. The Project also recommends infiltration of stormwater whenever practical.

Did you conduct or participate in any cooperative research or restoration projects?

If yes, please elaborate:

Did you or participate on any **State/Regional/National workgroups or panels or attend any meeting pertaining to the above?**

If yes, please elaborate:

CHILDREN AND FAMILIES PROTECTION ACT

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: Per the provisions of the Act, the Project excludes schools, group day care centers and school age child care programs from adult mosquito control pesticide applications unless the pre-requisites for spraying are fulfilled.

If you have data on compliance with this Act and your program, please list here:

If you had difficulties with implementation of your program due to this law, please elaborate here:

Comments:

NPDES SECTION

Did your program note any adverse incidents during this reporting period? No

If yes please list any corrective actions here: _____

GENERAL COMMENTS

Please list any comments not covered in this report: _____