MASSACHUSETTS MOSQUITO CONTROL
ANNUAL OPERATIONS REPORT

2013 Year of Report Date of Report: January 8, 2014

Project/District Name: **Central Mass. Mosquito Control Project**

Address: 111 Otis St.

City/Town: Northborough, MA Zip: 01532

Phone: (508) 393-3055 Fax: (508) 393-8492

E-mail: cmmcp@cmmcp.org

Report prepared by: *Tim Deschamps*

NPDES permit no. **MAG87A023**

If you have a mission statement, please include it here: The objective of the Project is to attain an efficient, economic mosquito control operation which will provide the best results possible and be consistent with all ecological aspects and the best interests of the member towns.

Our goal is to reduce mosquito exposure to the public, and the potential for disease transmission by mosquitoes, by utilizing proven, sound mosquito control techniques. CMMCP believes the best way to accomplish this task is by practicing an Integrated Pest Management (IPM) approach as it relates to mosquito control in Massachusetts. IPM utilizes a variety of control techniques and evaluation procedures. Control efforts are undertaken only after surveillance data has been collected and analyzed. Training, experience and common sense dictate our response in any given situation.

It is our desire and responsibility for this Project to have the best mosquito control for the communities that we serve.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Richard Day, Chair
Dean Mazzarella
Sam Telford
Pablo Noguera
Paul Mazzuchelli

Please list the Supt./Director's name: Tim Deschamps
Please list the Supt./Director's contact phone number: (508) 393-3055
Please list your Asst. Supt./Asst. Director's name: Tim McGlinchy

Do you have a website? Yes If yes, please list the web address here: http://www.cmmcp.org

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

Full time: 20
Part time:
Seasonal: 5
Other: (please describe)

Please break these down into the following areas:

Administrative staff: 2.5
Field staff: 17.5
Please check off all that apply, and list employee name(s) next to each category:
☒ Public relations Tim Deschamps, Curtis Best, Tim McGlinchy, Frank Cornine, Juliana Miller, all field staff
☒ Information technology Tim Deschamps
☒ Entomologist curtis Best, Frank Cornine, Juliana Miller
☒ Wetland Scientist Katrina Proctor
☒ Biologist Frank Cornine
☒ Education Curtis Best, Juliana Miller, Frank Cornine, Tim Deschamps
☒ Laboratory Curtis Best, Juliana Miller, Frank Cornine
☒ Operations Tim McGlinchy
☒ Facilities Tim Welch
☒ Other (please list) Office Manager, Karen Millet

For the year of this report, we maintained:
28 vehicles
2 modified wetland equipment (list type) Link Belt 1600, John Deere 350
16 ULV sprayers (list type) ProMist HD
5 Larval control equipment (list type) Muryama backpack sprayers
Other (please be specific):

Comments: _____

How many cities & towns in your service area? 40
Please list: Acton; Ashland; Auburn; Ayer; Berlin; Billerica; Blackstone; Boxborough; Boylston, Chelmsford; Clinton; Dracut; Devens; Fitchburg; Holliston;
Hopedale; Hopkinton; Hudson; Lancaster; Leominster; Littleton; Lowell (effective July 1) Lunenburg; Marlborough; Milford; Millbury; Millville; Natick; Northborough; Northbridge; Sherborn; Shrewsbury; Southborough; Stow; Sturbridge; Tewksbury; Uxbridge (service ended June 30); Webster; Westborough; Westford; Wilmington

Any changes to your service area this year? Yes

Please list cities/towns added or removed Uxbridge voted out May 2013. Lowell voted in Fall 2012, effective July 1, 2013. Groton voted in Fall 2013, effective July 1, 2104.

***Please attach a link to a map of your service area if possible.**
http://www.cmmcp.org/area.htm

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):**

Comments: _____

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: To control mosquitoes in the larval stage to reduce mosquito emergence and reduce adulticide use

Please give the time frame for this program: March - October

Describe the areas that this program is used: wetlands, catch basins, stormwater structures, containers (i.e. tires, etc.)

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; Agnique MMF, EPA #53263-28
Catch basins: Altosid WSP, EPA#2724-448; FourStar 45 day briquets, EPA#83362-3; Vectolex WSP, EPA#73049-20
Containers: Vectobac G, EPA#73049-10; Agnique MMF, EPA#53263-28; Vectolex WSP, EPA#73049-20
Other (please list):

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

Wetlands: Vectobac G, 5-20lbs/acre; Agnique MMF, 0.2-1 gal./acre
Catch basins: Altosid WSP, 1 packet/basin, FourStar 45 day briquets, one/basin
Containers: Vectobac G, 5-20lbs/acre; Agnique MMF, 0.2-1 gal./acre, Vectoloex WSP, one packet per 100sq. ft.
Other:

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

☒ Larval dip counts – please list trigger for application: >1 larvae per 5 dips avg.
☒ Historical records
☒ Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible. Basin application maps included as standard in town annual reports - check here: http://www.cmmcp.org/about.htm**

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To supress populations of adult mosquitoes

Please give the time frame for this program: May - October as weather allows

Describe the areas that this program is used: streets, yards, recreational areas, schools (under the Children's Protection Act regulations)

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 - trial basis only
3).
4).
5).
6).

Please list your application rates for each product:
1). Anvil - 0.0012 lbs a.i./acre, 1.9 oz. per minute at 15mph (standard protocol)
2). Anvil - 0.0024 lbs a.i./acre, 3.8 oz. per minute at 15mph (vector control)
3). Mavrik Perimeter - 1/2oz./5 gal mixed, vehicle speed 10mph, flow rate 1 gal./minute
4).
5).
6).

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

as often as necessary; at least 24 hours apart

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

☒ Landing rates - please list trigger for application >1 per minute*
☒ Light trap data - please list trigger for application >5 human-biting per night*
☒ Complaint calls - please list trigger for application >2 per square mile*
☒ Arbovirus data
☒ Best professional judgment

Comments: * recommendations from the mosquito control GEIR

***Please attach a link to maps of treatment areas if possible. n/a - street names listed in each annual report & on work reports given to local Board of Health**

SOURCE REDUCTION

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

If yes, please describe your program: The program consists of three components:

1. Clean-up of large waste tire dumping sites that we have databased and that require repeated larval control measures;
2. Residential waste tire removal (curb-side); and
3. Removal of waste tires discarded on the side of the road.

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

Comments: 2,444 tires (24.44 tons) recycled in 125 member communities in 2013

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:
☒ Inland/freshwater
☐ Saltmarsh

If yes, please describe: Maintenance of existing ditch systems by removal of accumulated organic debris and other obstructions.

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: no salt marsh in our service area

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

Hand cleaning 189,299 ft.
Mechanized cleaning 7,437 ft.
Other (please list):

Comments: _____

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

Hand cleaning n/a
Mechanized cleaning n/a
Other (please list):

What time frame during the year is this method employed? n/a

Comments: _____

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

MONITORING (Measures of Efficacy)

Please describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: **one dip station per 250 acres**
Larvicide – catch basins:
Larvicide-hand/small area checks in 2013 **as many as time & manpower allow - 223**
Ground ULV Adulticide: **evaluation of vector control spraying in 2013**
Source Reduction: **as directed in the BMP**
Open Marsh Water Management:
Other (please list): **adverse effects for NPDES monitoring were done when technicians revisited a treated area - notations were made on their work reports (no adverse effects noted in 2013)**

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy, (pre and post data) and resistance testing (if any): **2007: To test the efficacy of the CMMCP standard adulticide procedure, two sites were chosen per week for seven weeks with mosquito collections made for both sites every weekday evening. One of these sites was selected to be sprayed in the standard manner while the other is not sprayed and is used as the control site. Collections were made for each site Monday through Friday with the experimental site being adulticided on Wednesday evenings. Test sites were chosen from service requests received, while the control sites were selected from nearby areas that the residents were informed that their property would be treated as an exclusion area for that week. Of the seven weeks of trials, four were at residential sites, two at recreational locations, and one was at a transfer station. 2008: A local collection of recreational fields was selected as the site for this project based primarily on layout and dense barrier foliage, ideal for this type of application.**

The treatment and control sites were on separate fields towards the opposite ends of the complex. Once established, pre-application surveillance began at the two sites using model 512 CDC miniature light traps baited with CO2 (500ml/min), along with model 1512 collection bottle rotators . These traps were place in the recreational field away from the foliage so that in order for the host-seeking mosquitoes to reach the traps, they would have to travel through the treated foliage. Bottle assays (2007, 2008, 2009, 2010, 2011 & 2012): The bottle assay procedure used by CMMCP was modeled after the CDC method where a baseline for resistance was established using specimens collected from an area without any historical adulticide exposure. This data could then be plotted against data from mosquito populations in areas where our records show past insecticide usage has occurred. This will determine if any degree of resistance has developed to our current adulticide product.

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: 2-5 depending on season & budget/personnel restrictions

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

- ☒ Gravid traps
- ☒ Resting boxes
- ☐ CDC light traps ☐ Canopy
- ☒ CDC light traps w/CO_2 ☒ Canopy
- ☐ ABC light traps ☐ Canopy
- ☐ ABC light traps w/CO_2 ☐ Canopy
- ☐ NJ light traps ☐ Canopy
- ☐ NJ light traps w/CO_2 ☐ Canopy

Other (please describe):

Please describe the purpose of this program: Monitor for species density, population trends and virus isolations

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

If yes, please describe how you chose these long-term sites. Prior virus isolations, geography and collection data

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

- ☐ *Ae. albopictus*
- ☒ *Ae. cinereus*
- ☒ *Ae. vexans*
- ☒ *An. punctipennis*
- ☒ *An. quadrimaculatus*
- ☒ *Cq. perturbans*
- ☒ *Cx. pipiens*
- ☒ *Cx. restuans*
- ☐ *Cx. salinarius*
- ☒ *Cs. melanura*
- ☐ *Cs. morsitans*
- ☒ *Oc. abserratus*
- ☒ *Oc. canadensis*
- ☐ *Oc. cantator*
- ☒ *Oc. excrucians*
- ☒ *Oc. fitchii*
- ☒ *Oc. j. japonicus*
- ☐ *Oc. punctor*
- ☐ *Oc. sollicitans*
- ☐ *Oc. stimulans*
- ☒ *Oc. taeniorhynchus*
- ☒ *Oc. triseriatus*
- ☒ *Oc. trivittatus*
- ☒ *Ps. ferox*
- ☒ *Ur. sapphirina*

☐ Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? 50-75

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: 14 isolations of WNV in several mosquito species. EEE horse death in Tyngsboro (non-member town, borders member communites of Chelmsford, Dracut, Lowell, Westford.

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

WNV: low-moderate
EEE: low-moderate

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

WNV: low -moderate
EEE: low-moderate

What time frame during the year is this method employed? May - October

Comments: _____

***Please attach a link to maps of surveillance areas if possible. Mosquito trap locations included as standard in town annual reports - check here: http://www.cmmcp.org/about.htm**

EDUCATION, OUTREACH & PUBLIC RELATIONS

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

If yes, please describe: Letters sent out to all school Superintendents regarding our program each year. Program describes mosquito biology and ways to minimize mosquito breeding from containers. Letters also sent to all Senior Centers regarding new educational program geared towards seniors.

Please check off all that apply:

☒ School based program
☒ Website
☒ PR brochures/handouts
☒ Community events
☒ Science fairs
☒ Meeting presentations
☒ Other (please describe): health fairs

Please give an estimate of attendance/participants in this program: 2,500+

Please list some events you participated in for the year of this report: too numerous to list, please call for details

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

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

If yes, please elaborate on your research projects: Details on our website here: http://www.cmmcp.org/research.htm

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Not at this time

If yes, please elaborate on your collaborations this past year:

Please provide a list of technical reports, white/grey papers, publication in journal or trade magazines, etc. Details on our website here: http://www.cmmcp.org/research.htm

Does your staff participate in educational opportunities? Yes

If yes, please list the training and education your staff received this year: Clarke seminar; NMCA meeting; CPR/AED training, internal training, beaver mgmt, excavator safety

Please list the certifications and degrees held by your staff: Curtis Best, B.A. in Entomology: Frank Cornine, B.A. in Biology completed Masters in Public Health: Juliana Miller, B.A. in Biology; Tim McGlinchy, MS non-profit mgmt. Katrina Proctor certifications in wetland science; Tim Deschamps, numerous licenses and certifications

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? No

If yes, please describe:

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators?

Please check off all that apply:

☐ Predatory fish
☐ Predatory invertebrates
☐ Other (please describe):

What time frame during the year is this method employed?

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: Beginning to use GIS systems; all computers networked

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities:

Please describe any changes/enhancements in this area from the previous year: Addition of larval habitats and treatments in ArcView; Sentiel GIS being integrated

Comments: _____

REVENUES & EXPENDITURES

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

1,801,893 budget FY13. $1,690,278 expended, $111,618 surplus.

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

Comments:

ACTON	**$58,247**
ASHLAND	**$35,643**
AUBURN	**$40,008**
AVON	**$22,710**
AYER	**$28,408**
BERLIN	**$78,689**
BILLERICA	**$26,275**
BLACKSTONE	**$25,455**
BOXBOROUGH	**$69,232**
BOYLSTON	**$34,321**
CHELMSFORD	**$17,248**
CLINTON	**$56,279**

DRACUT	$67,479
FITCHBURG	$47,247
HOLLISTON	$13,696
HOPEDALE	$67,179
HOPKINTON	$34,620
HUDSON	$59,095
LEOMINSTER	$75,170
LITTLETON	$40,276
LUNENBURG	$58,564
MARLBOROUGH	$66,271
MILFORD	$44,252
MILLBURY	$38,233
MILLVILLE	$11,240
NATICK	$63,248
NORTHBOROUGH	$48,868
NORTHBRIDGE	$41,806
SHERBORN	$37,277
SHREWSBURY	$64,794
SOUTHBOROUGH	$39,054
STOW	$40,802
STURBRIDGE	$80,445
TEWKSBURY	$60,560
UXBRIDGE	$66,167
WEBSTER	$32,839
WESTBOROUGH	$58,272
WESTFORD	$79,755
WILMINGTON	$51,588

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: Vectobac G
EPA Reg. #: 73049-10
Application method: hand/backpack
Targeted life stage: Larvae
Total amount of concentrate applied: 3,418 lbs.
Comments: _____

Product Name: Vectobac G
EPA Reg. #: 73049-10
Application method: helicopter
Targeted life stage: Larvae

Total amount of concentrate applied: 10,040 lbs.
Comments: 3 towns - Billerica, Boxborough & Chelmsford

Product Name: Agnique MMF
EPA Reg. #: 53263-28
Application method: pump can
Targeted life stage: Larvae/pupae
Total amount of concentrate applied: 27.36 gal.
Comments: _____

Product Name: Altoside WSP
EPA Reg. #: 2724-448
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 542.81 lbs.
Comments: catch basins only - 36,471 basins at 7 grams/basin

Product Name: FourStar Microbial 45 day briquets
EPA Reg. #: 83362-3
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 15,451 45 day briquets
Comments: used as pre-emptive treatments in catch basins in prior year WNV areas

Product Name: Vectolex WSP
EPA Reg. #: 73049-20
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 6.37 lbs.
Comments: swimming pools & catch basins

Product Name: Anvil 10+10
EPA Reg. #: 1021-1688-8329
Application method: truck (ulv)
Targeted life stage: Adult
Total amount of concentrate applied: 335.64 gal (10% solution)
Comments: _____

Product Name: Mavrik Perimeter
EPA Reg. #: 2724-478
Application method: truck (barrier)
Targeted life stage: Adult
Total amount of concentrate applied: 1.5 oz. in 16 gal. - test for efficacy
Comments: _____

Product Name:

EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
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. Only a few ACEC's, Sudbury Valley Trustees Property, and Assabet River National Refuge

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? No

If yes, please elaborate

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: On a requested, as needed basis

Have you worked with these departments on long term solutions? No

If yes, please elaborate:

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: Incomplete compliance by schools regarding our products, including larval control products

If you have data on compliance with this Act and your program, please list here: approx. 85% compliance

If you had difficulties with implementation of your program due to this law, please elaborate here: We have sent letters and hand delivered information packets to the School Superintendents' offices for 8 years now, compliance is slowly rising.

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: _____