MASSACHUSETTS MOSQUITO CONTROL
ANNUAL OPERATIONS REPORT

2009 Year of Report Date of Report: January 11, 2010

Project/District Name: **Norfolk County Mosquito Control Projest**

Address: Bldg.# 34 Endicott Street

City/Town: Norwood Zip: 02062

Phone: 781-762-3681 Fax: 781-769-6436

E-mail: ncmcp@verizon.net

Report prepared by: *John J. Smith*

If you have a mission statement, please include it here: Commission Mission Statement: "The Norfolk County Mosquito Control Project Commission represents the interests of the member communities and their residents by providing oversight of Project activities. The Commissioners each live or work within a community serviced by the Project, were nominated by municipal authorities, and were evaluated and appointed to their posts by the State Reclamation and Mosquito Control Board. The Commission strives to ensure that the member communities receive services consistent with applicable laws and justified by tenets of public health, vector control, environmental safety and fiscal responsibility. The Commission invites input and questions from community officials and residents. The Project's website announces the Commission's monthly meetings and planned agendas, and hosts minutes from past meetings."

ORGANIZATION SETUP:

Please list your Commissioner's names:

Linda R. Shea, Chairman
Maureen P. MacEachern
Robin L. Chapell
Richard J. Pollack
Norman P. Jacques

Please list the Supt./Director's name: John J. Smith
Please list the Supt./Director's contact phone number: 781-762-3681
Please list your Asst. Supt./Asst. Director's name: David A. Lawson

Do you have a website? Yes

If yes, please list the web address here: http://www.massnrc.org/ncmcp/

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

Full time: 11
Part time: 1
Seasonal: 1
Other: (please describe)

Please break these down into the following areas:

Administrative staff: 7
Field staff: 6

Please check off all that apply, and list employee name(s) next to each category:
☒ Public relations John Smith, David Lawson, Caroline Haviland, Nate Boonisar, Channsotha Suom, Elizabeth Donnell
☒ Information technology Nathaniel Boonisar GIS, Channsotha Suom
☒ Entomologist Channsotha Suom
☒ Wetland Scientist Caroline Haviland
☒ Biologist John J. Smith- Aquatic Biology/Aquatic Ecology/Limnology; Caroline Haviland-Environmental/Wetland Science concentration
☒ Education Channsotha Suom
☒ Laboratory Channsotha Suom, John Smith
☒ Operations John Smith, David Lawson, Elizabeth Donnell, Caroline Haviland, Nate Boonisar, Channsotha Suom, Brian Moore, Robert O'Halloran, David Foley, William Haviland, John Tuana
☒ Facilities David Lawson
☐ Other (please list) Brian Moore, Bill Haviland, Robert O'Halloran, Dave Foley, John Tuana

For the year of this report, we maintained:
19 vehicles
2 modified wetland equipment (list type) Linkbelt, Kobelco SK60 excavators
5 ULV sprayers (list type) Promist with Smartflow calibration systems and Datamaster data capture systems
Larval control equipment (list type) hand applications only
Other (please be specific):

Comments: _____

How many cities & towns in your service area? 25
Please list: Avon, Bellingham, Braintree, Canton, Dedham, Dover, Foxborough, Franklin, Holbrook, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Plainville, Quincy, Randolph, Sharon, Stoughton, Walpole, Westwood, Weymouth, Wrentham

***Please attach a link to a map of your service area if possible.**
http://www.massnrc.org/ncmcp/aboutthe.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: Targeted preemptive control measures are the most cost effective, efficient and environmentally friendly way to reduce mosquito populations. NCMCP applies insecticides to shallow water to control mosquitoes in their most vulnerable aquatic stages in an attempt to prevent the emergence of adult mosquitoes. A data base of mosquito larval development sites are checked and treated as necessary by means of hand and/or aerial application.

Aerial Larval Control Program:

Spring and summer flooding following snow melt and/or heavy rainfall creates a potential each year for significant mosquito larval development in various wetlands across Norfolk County. The predominate species which develop in the spring are Ochlerotatus abserratus, Ochlerotatus excrucians and Ochlerotatus canadensis. In the summer the predominate species following river flooding are Ochlerotatus trivittatus, Aedes cinereus, Aedes vexans, Psorophora ferox and Ochlerotatus canadensis. All of these mosquito species are strong human biters and can create significant nuisance level populations during the late spring and summer months. During certain years some of the summer mosquito species, such as Aedes vexans, may be involved in the transmission of Eastern Equine Encephalitis (EEE) from birds to humans. In an effort to proactively control these aggressive human biting species, and in an environmentally responsible manner, the Norfolk County Mosquito Control Project conducts aerial larval control operations using a product called Bacillus thuringiensis israelensis (Bti). In small wetlands and in larval development sites proximate to homes where aircraft applications are not suitable. In these areas hand applications using the same product at the same rates are utlilized.

Rain Basin/Detention Basin Treatments:

NCMCP makes applications of an insecticide to catch basins, storm water structures, etc. to control primarily Culex mosquitoes in their aquatic stages. Catch basin treatments were added back into the larval control efforts of NCMCP with the identification of the West Nile virus (WNv) in the state during the summer of 2000. Culex species have been identified as likely vectors of WNv.

Please give the time frame for this program: mid-April through early September (Rain Basins early June through mid-August).

Describe the areas that this program is used: The typical wetlands treated during the spring are described as large (greater than five acres) Wooded Swamp Deciduous/Coniforous/Mixed, Shrub Swamp, Shallow Marsh/Meadow/Fen wetlands as delineated on the DEP Wetland GIS Shape File. Summer applications are more typically conducted over river floodplain areas especially within wetlands adjacent to the Neponset and Charles Rivers. Maps of aerially targetted wetlands are available on the Projects website.

Rain Basin treatments typically ocurr in high basin areas around centers of towns and heavy residential/commercial areas.

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: Bti (Bacillus thuringiensis israelensis) granular (Vectobac G) EPA Reg. # 275-50
Catch basins: Methoprene (Altosid) EPA Reg No. 2724-375, Bacillus Sphericus (VectoBac WSP) EPA Reg. No. 73049-20
Containers: Methoprene (Altosid) EPA Reg No. 2724-375
Other (please list):

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

Wetlands: Vectobac G Spring 5 pounds/acre, Summer 7.5 pounds/acre
Catch basins: One Methoprene (altosid) - briquett/basin, stormwater detention basins - one briquett/ 100 sq. ft, one WSP pouch/basin or 1/50 sq. ft.
Containers: One Methoprene (altosid) briquett/ 100 sq. ft.
Other:

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

☒ Larval dip counts – please list trigger for application: presents of larvae and instar stage during pretreatment dips
☒ Historical records
☒ Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible.**
http://www.massnrc.org/ncmcp/aerial%20acres.htm

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: When larviciding is not a viable option (example: Coquillettidia perturbans) and/or when adult mosquito populations reach levels which are either bothersome to residents and/or a public health concern is realized, targeted adulticiding applications are used. NCMCP makes decisions to use adulticides based on evaluations of the risks of EEE or WNv transmission to humans in collaboration with MDPH or based on evaluations of the nuisance level that residents

report to NCMCP. NCMCP also bases decisions to adulticide on mosquito surveillance (trap counts), field crew observations and after careful analysis of predicted local weather conditions.

Please give the time frame for this program: Late May through mid-Septemeber depending on weather conditions.

Describe the areas that this program is used: These applications typically take place in residential areas. Maps of the areas to be treated are loaded on the Projects website by 3:30 P.M. the day before the scheduled application.

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 ULV (Sumithrin) EPA Reg. #1021-1688-8329
2).
3).
4).
5).
6).

Please list your application rates for each product:
1). 0.62 fluid ounces/acre
2).
3).
4).
5).
6).

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

maximum frequency once per week - on average for most residential areas @ 1 to 4 applications per month

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

☒ Landing rates - please list trigger for application used occassionally to verify complaint calls
☒ Light trap data - please list trigger for application more than five human biting mosquitoes per trap night
☒ Complaint calls - please list trigger for application more than one per one mile radius
☒ Arbovirus data
☒ Best professional judgment

Comments: _____

***Please attach a link to maps of treatment areas if possible.**
http://www.massnrc.org/ncmcp/spraysch.htm

(Note: these maps are only available on the website during the months when these applications are taking place)

SOURCE REDUCTION

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

If yes, please describe your program: NCMCP advises residents/Boards of Health in person or via phone or internet to empty any containers that may hold water on their property. When performing site visits, personnel will overturn containers or tires that hold water and may contain mosquito larvae.

What time frame during the year is this method employed? June through September

Comments: The NCMCP also considers our Ditch Maintenance, FWWM and OMWM programs valuable methods of source reduction.

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

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

If yes, please describe: The NCMCP Water Management Program consists of clearing previously existing and maintained drainage ditches and streams of silt, vegetation and debris in order to restore proper water flow, eliminate standing water, thus reducing mosquito larval development. Crews clear these systems through the use of several different types of hand tools, as well as through the use of our two specialized wide-tracked, low ground pressure excavators. This work is performed pursuant to chapter 252 of the MA General Laws in compliance with established federal (USACE) guidelines

and oversight. The NCMCP is interested in working with the regulatory community, within the legal thresholds, in order to implement source reduction practices that specifically improve our wetland resources or habitats for fish and wildlife. Water Management work can reduce the amount of insecticide the Project has to use in order to reduce the nuisance/vector population of mosquitoes in the surrounding area. We refer to this type of work as source reduction work and consider such work to be an important part of an Integrated Pest Management (IPM) strategy. Data collection and surveillance measures are important elements of any mosquito IPM strategy. Data collected during insecticide applications is used to aid in the determination of future Water Management Project sites.

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 202,860 feet checked and 96,923 cleaned
Mechanized cleaning 4,645
Other (please list): Brushing for Mechanized cleaning - 1,960 ft

Comments: _____

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

Hand cleaning 0

Mechanized cleaning 0

Other (please list):

What time frame during the year is this method employed? All year, but primarily Fall and Winter

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/post monitoring of larval populations including determination of developmental stage (instar & pupae)**
Larvicide – catch basins:
Larvicide-hand/small area **pre/post monitoring of larval populations including determination of developmental stage (instar & pupae)**
Ground ULV Adulticide: **pre/post CDC Light trap sampling, complaint call data, field observations**
Source Reduction: **pre/post monitoring of larval populations including determination of developmental stage (instar & pupae)**
Open Marsh Water Management: **pre/post monitoring of larval populations including determination of developmental stage (instar & pupae)**
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):

Website showing aerial larval control efficacy protocol and data:

http://www.massnrc.org/ncmcp/2009_New%20Look/2009_Aerial%20Efficacy_1024.htm

Website showing adult control efficacy protocol and data:

http://www.massnrc.org/ncmcp/NCMCP%20ULV%20efficacy%20study.pdf

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? Yes

If yes, please describe: Open Marsh Water Management is a technique which provides a greater access to the salt marsh for small fish which eat mosquito larvae developing on the marsh. This greatly reduces the need for mosquito adulticiding in the immediate neighborhood. The work also reverses some of the changes that were done to the

marsh when it was originally ditched. OMWM also prevents the encroachment of invasive plants and provides better habitat for waterfowl and other birds.

Please give an estimate of total square feet or acreage: 0

What time frame during the year is this method employed? Late Fall - winter

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: 50+ gravids, @25 CDC Light traps, more deployed in virus positive locations

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: CDC Light Traps: CDC Light Traps with CO2 are used to determine the presence of adult mosquitoes and their density. CDC Light Traps with CO2 are also used to monitor for EEE and West Nile Virus. Collections of mosquitoes (pools) are submited weekly to the Massachusetts Arbovirus Surveillance Laboratory (MDPH) for the purpose of monitoring the presence of West Nile Virus and EEE in local mosquito populations.

Gravid Traps: These traps are used by NCMCP to collect primarily Culex pipiens and restuans mosquitoes for submission to the Massachusetts Arbovirus Surveillance

Laboratory (MDPH) for West Nile Virus analysis. Gravid mosquitoes which are attracted to these traps are important to sample because they may have recently fed on a bird. The bird biting species are usually the first to pick up the virus since they feed primarily on birds where West Nile virus originates.

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

If yes, please describe how you chose these long-term sites. CDC Light Traps: CDC Light traps with CO2 are placed for maximum collection of species of interest both for monitoring of human biting populations as well as for collection of species important in the transmission of EEE and WNv.

Gravid Traps: Gravid Traps are placed at locations for maximum collection of Culex pipiens and restuans. Traps are located in all 25 communities usually in the highest urbanized areas for maximum collections.

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? @22

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:
2009: Cow Case - Walpole 10/7/2009 EEEV
2005: Horse Case - Wrentham 8/24/2005 EEEV

2004: Horse Case - Walpole 8/25/2004 EEEV
Human Cases - under 18, 8/23/2004 EEEV
- under 18, 10/24/2004 EEEV

Data from MDPH website.

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

WNV: Low risk level for entire county.
EEE: Remote risk for entire county.

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

WNV: Low risk level for entire county.

EEE: Remote risk for entire county with the exception of the Town of Walpole which was classified as high risk following identification of EEEV cow case.

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

Comments: _____

***Please attach a link to maps of surveillance areas if possible.**
http://www.massnrc.org/ncmcp/trap%20map.htm

EDUCATION, OUTREACH & PUBLIC RELATIONS

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

If yes, please describe: NCMCP maintains a very informative website which is updated daily during the season. Maps depicting areas to receive larval/adult treatments are availbale to all residents of the county. Information on all the mosquito control products NCMCP uses are available on the website as well as links to regulatory agencies such

as the Federal Environmental Protection Agency and the State Pesticide Bureau. The website also contains links to the Massachusetts Department of Public Health and the Centers for Disease Control and Prevention (CDC) where residents can find up to date information on arbovirus activity in the county, the state as well as country wide. There is information available on how a resident may go about excluding their property from the Program as well as links which help guide daycare managers and school administrators through the some what complex compliance requirements of the Childrens and Family Protection Act. The website also provides rapid access to the Projects administrative personnel through the email link at the bottom of the websites main page.

Please check off all that apply:

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

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

Please list some events you participated in for the year of this report: annual town meeting, board of health meeting, city councilor community meetings, meeting with mayor, Community Cable show 30 minute, Health Fairs

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:
1) Host-Seeking Activity of Mosquitoes in Massachusetts
Frank Cornine III, Central Mass. Mosquito Control Project - presented at NMCA meeting Dec. 2009 - Chan Suom (NCMCP) collaborated with this research.

2)Utilization of Resting Boxes in Southeastern MA – Part 2
Priscilla Matton, Bristol County Mosquito Control, and Nate Boonisar,
Norfolk County Mosquito Control Project - presented at NMCA meeting Dec. 2009

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

If yes, please elaborate on your collaborations this past year: NCMCP is acting as an advisor and potential collaborator on a mitigation project in Weymouth on the Call Road Salt Marsh with the Environmental Consulting Company AECOM. Preliminary plans were formulated in 2009. On going collabation with various environmental groups, regulators as well as other stake holders on OMWM monitoring.

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: Northeastern Mosquito Control Association Annual Meeting, Sturbridge, Ma., December 2009. AMCA Webinar IPM Base Training, AMCA Webinar Media Communications Training, Northeastern Mosquito Control Association Field Equipment & Safety Training October 2009, various DPH conference calls and meetings relative to adult surveillance, processing of pools and analysis of virus isolations.

Please list the certifications and degrees held by your staff: Director - Bachelor of Science, Asst. Director - Masters (Geology), Water Management Program Coordinator - Bachelor of Science, GIS Coordinator - Masters (Geological Oceanography), Entomologist - Masters (Entomology)

All field staff hold pesticide licenses and certifications in the Mosquito and Biting Fly Category

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? Yes

If yes, please describe: OMWM...see comments in section above.

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

NCMCP uses GIS in various aspects of our work.

Spring aerial larvicide: GIS is a valuable tool in this aspect of our program. Using the Mass. DEP wetland layers, NCMCP identifies potential larval development areas that NCMCP personnel also dip on a yearly basis. The dip data is added to each wetland and NCMCP now has stored up to 9 years of mosquito larval development data on these wetlands. The wetland files can be directly converted and loaded into aircraft, and treatment information (flight paths) from the aircraft can be converted back into GIS shapefile format and stored. Coupled with this, NCMCP uses the wetland layers to determine ground larvicide sites and store larval dip data for these as well.

ULV Applications: NCMCP regularly geocode (plots) request calls based on address and NCMCP plans ULV treatments around these calls. Paper maps are given to the field crew to aid in their work. As of 2007, NCMCP acquired GPS tracking devices for the ULV spray trucks. The GPS data can be converted into GIS format and stored on our system to monitor areas that were treated, as well as time of treatment, and treatment rate. NCMCP is currently working on a project to plot request calls back 10 years. This will help NCMCP locate consistent problem areas and provide guidance as to what areas need more attention on a yearly basis.

Water Management: Using the layers provided by MassGIS, NCMCP can locate wetlands, streams, environmentally sensitive habitats, water supply areas, etc. and plan field work around these sites. Additionally, remote sensing using the aerial photographs (both real color and infrared) provides useful information on the areas. Some NCMCP towns also have their own GIS layers including pipes, culverts, ditches, and 2-foot contour lines which provide an extremely detailed depiction of an area. NCMCP also has site specific GIS shapefiles that document all water management/hand cleans which includes all relevant information regarding work performed at each site

Please describe your current GIS abilities: Advanced

Give details if possible on your GIS abilities: We use ArcMap 9.3. NCMCP's Surveillance Tech continues to learn new capabilities of this software. His abilities include general map-making, geocoding, buffering, calculating acreages and lengths, analization using different colors/sizes of features based on associated data, and the ability to create professional looking maps. ArcMap has a wide variety of uses, and as NCMCP attempt new analization techinques, the Surveilance Tech learns more of the abilities of ArcMap.

Please describe any changes/enhancements in this area from the previous year: Updates to software/hardware to further facilitate advanced analitical capabilities

Comments: ____

REVENUES & EXPENDITURES

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

Expenditures by Object Code:

A01-State Employee Compensation		576,870.95
B02-In-State-Travel	19.50	
B05-Conference Training	1,875.00	
B08-Clothing Allowance	100.00	
B10-Exigent Job-Related Expenses		6,662.52
D09-Fringe Benefits	91,654.37	
D12-14-19- Insurance	7,103.95	
D20-Pension-Insurance Expenditures		86,050.00
E01-Office & Administrative Supplies		1,646.05
E02-Printing Expenses	78.00	

E06-Postage 384.00
E12-Subscrip., Mmbrshps & Licensing Fees 70.00
E13-Advertising Expenses 264.90
E14-Exhibits and Displays 423.43
E15-Bottled Water 225.99
E19-Fees,Licenses,Permits &Chargeback 700.00
F05-Laboratory Supplies 1,596.23
F09-Clothing & Footwear 2,406.24
F11-Laundry & Cleaning Supplies 350.33
F24-Motor Vehicle Maintenance & Repair 4,431.60
G01-Space Rental 66,250.00
G03-Electricity 7,556.64
G05-Fuel for Vehicles 17,271.26
K11-Heavy Equipment 643.66
L26-Printing,Photocopying Equip. Rental 1,111.56
L46-Photocopy Maintenance Repair 100.74
L51-Heavy Equipment Maint & Repair 1,118.97
N50-Non-Major Facility Maint. Repair 1,002.00
N52-Facility Maintenance & Repair Suppl 1,751.40
N64-Garden Expenses (insecticides), Tools & Supplies 375,017.59
N71-Exterminators (aerial applicator) - IPM 87,538.56
N73-Non Hazardous Waste Removal 1,396.40
U01-Telecommunications Services Data 149.95
U02-Telecommunications Services Voice 7,728.40
U03-Software & IT Licenses 1,000.00
U07-Information Technology Equipment 2,698.67

OVERALL TOTAL 1,355,248.86

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

Comments: FFY2009 DATA:	**District Assessment**	**SRB Assessment**	**Total**
AVON	**16,540**	**385**	**16,925**
BELLINGHAM	**53,912**	**1,254**	**55,166**
BRAINTREE	**72,501**	**1,687**	**74,188**
CANTON	**79,264**	**1,844**	**81,108**
DEDHAM	**53,812**	**1,252**	**55,064**
DOVER	**49,589**	**1,154**	**50,743**
FOXBOROUGH	**58,383**	**1,358**	**59,741**
FRANKLIN	**95,162**	**2,214**	**97,376**
HOLBROOK	**25,258**	**588**	**25,846**
MEDFIELD	**48,483**	**1,128**	**49,611**
MEDWAY	**37,844**	**880**	**38,724**

MILLIS	**28,496**	**663**	**29,159**
MILTON	**65,380**	**1,521**	**66,901**
NEEDHAM	**74,502**	**1,733**	**76,235**
NORFOLK	**37,057**	**862**	**37,919**
NORWOOD	**55,387**	**1,288**	**56,675**
PLAINVILLE	**27,853**	**648**	**28,501**
QUINCY	**111,352**	**2,590**	**113,942**
RANDOLPH	**49,277**	**1,146**	**50,423**
SHARON	**66,166**	**1,539**	**67,705**
STOUGHTON	**67,715**	**1,575**	**69,290**
WALPOLE	**76,934**	**1,790**	**78,724**
WESTWOOD	**53,657**	**1,248**	**54,905**
WEYMOUTH	**88,354**	**2,055**	**90,409**
WRENTHAM	**50,511**	**1,175**	**51,686**
Total	**1,443,389**	**33,577**	**1,476,966**

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: Anvil 10+10 ULV (Sumithrin)
EPA Reg. #: 1021-1688-8329
Application method: ULV truck mounted sprayer
Targeted life stage: Adult
Total amount of concentrate applied: 624.66 gallons
Comments: _____

Product Name: Vectobac G (Bti)
EPA Reg. #: 730 49-10
Application method: Helicopter, by hand
Targeted life stage: Larvae
Total amount of concentrate applied: 59,715 lbs
Comments: 57,440 lbs - aerial; 2,275.85 lbs by hand

Product Name: Altosid (Methoprene)
EPA Reg. #: 2724-421
Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 1,157.12 lbs
Comments: Altosid 150 day briquets

Product Name: VectoLex WSP
EPA Reg. #: 73049-20

Application method: hand
Targeted life stage: Larvae
Total amount of concentrate applied: 423.43 lbs
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
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. Our largest exclusion zone is the Massachusetts Audubon Society's Moose Hill Wildlife Sanctuary in Sharon. NCMCP does not adulticide or larvicide this area. Moose Hill accounts for approximately 11% of the Town of Sharon's wetland area. The towns of Canton and Norfolk have smaller, but still significant Audubon properties that are excluded. All resident exclusion zones are located via parcel maps, geocoding, or field checks, and a 300-foot buffer zone is placed around them. These areas are shown on the field crew ULV maps, along with the written address of the exclusion.

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 NCMCP personell frequently inspect and treat contructed wetlands (retention, detention ponds, remediation site, etc.). Local Boards of Health have been asking at a much higher frequecy that NCMCP inspect and treat abandoned and/or non-maintained swimming pools. NCMCP has been contacted often by town boards for input on subdivision plans. At this point there is no legal mechanism to prevent the creation of mosquito larval development sites when developing a site.

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: NCMCP is in direct communication with local DPW departments with regard to clogged culverts and stormwater systems. NCMCP coordinates with many local DPWs annually to clean catch basins and drainage pipes of sand and debris that may eventually discharge into adjacent wetlands. Some town departments have assisted NCMCP by bearing the burdern of disposing of sands and sediments NCMCP removes from drainage ditches and/or streams. NCMCP has communicated with several Conservation Agents and Planning Board members in recent years relative to review, advise and discussion of stormwater issues. This relationship continues to expand.

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

If yes, please elaborate: see above

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: Throughout the Projects service area, NCMCP has approximately 225 schools and 252 day cares that must comply with this law. Each school/day care has been located either through parcel maps, when available, or through geocoding, combined with aerial photography or Pictometry. A 300-foot buffer zone has been created around the school/day care property as well as any adjacent athletic fields. On the ULV maps that the field crews use to navigate by, the streets within the buffer zone are shown in red (as an exclusion) along with a symbol indicating the location of the school/day care. The GIS layers are set in such a manner that a school or day care exclusion can be easily removed or replaced depending on compliance. The school and day care data are checked on a yearly basis for changes in status, and buffer zones updated accordingly. The exclusion zones are clearly marked on the ULV route maps that are posted on the Projects website in an effort to keep the public informed of the exclusionary status of these areas. It has become abundantly clear to The NCMCP, that local school systems consider the requirements of this act (in relation to mosquito control activities) overly burdensome.

If you have data on compliance with this Act and your program, please list here: NCMCP has a GIS layer showing points as locations of schools/day cares, and has a separate GIS layer depicting red lines as the exclusion zones around such properties.

If you had difficulties with implementation of your program due to this law, please elaborate here: NCMCP generally does not have widespread problems complying with this law, however there are, from time to time, issues which arise. In high density communities such as Quincy and Weymouth, the most common complaint received is from residents adjacent to schools, who question why they are in an exclusion zone. After explaining the law, the residents often express their frustration as to why their area can not be treated with the early morning ULV applications especially when the school is vacant at these hours. NCMCP is concerned that many residents may consider treating their own properties. NCMCP is concerned that this could cause an increase in non-professional applications of pesticides on properties within these exclusion zones. The situation is further exacerbated when mosquito borne viruses are identified in the area. Non-compliant schools, and some times students parents, will call NCMCP to have the school property treated. Very often after explaining the law, the school (and the concerned parents) express frustration as to the burdensome process that must be completed in order to bring the school/day care into compliance. NCMCP has had some instances where a public school is in compliance with the law, but an adjacent private school or day care was not, and the overlapping buffer zone prevented NCMCP from treating the public school. Satisfying the reguirements of the Act becomes particularly

frustrating in September when children are participating in outdoor sporting activities during peak viral activity. Parents and administrators typically want the athletic fields treated quickly without the extra burden of the Act. Again, this creates frustration for school officials, parents, and mosquito control projects.

Comments:

GENERAL COMMENTS

Please list any comments not covered in this report:

Seasonal Timeline:

March through May:
- Water management activities March through early April
- Ground & Aerial larval control applications early April through May
- Ground ULV control applications late May
- Surveillance activities larval surveys March through May, adult surveys May
- Equipment maintenance on going as needed during period
- Off loading of pesticide products on going during period
- Data management and analysis, map preparation on going during period

June through September:
- Ground & Aerial larval control applications including rain basin tretaments during period as needed
- Ground ULV control applications during entire period as needed
- Surveillance activities larval surveys & adult surveys during entire period including weekly submission of mosquito pools to MDPH
- Equipment maintenance on going as needed during period
- Data management and analysis, map preparation on going during period

October through early December:
- Surveillance activities adult surveys continue until mid to late October including weekly submission of mosquito pools to MDPH
- Water management activities resume during this period (most active period for this activity).
- Data management and analysis continue
- Equipment maintenance on going as needed during period

December through February:
- Employees encouraged to take vacation time during this period.
- Maintenance of facility and equipment (mainly during extreme weather events):
Equipment:
- winterize/de-winterize ULV sprayers
- fleet maintenance/repairs
- heavy equipment (excavators) maintenance/overhauls

- general equipment welding, repairs
- repairs and servicing of various surveillance equipment (CDC Light traps/Gravid traps/regulators, etc)

Facility:

- facility organization (vehicle storage areas, insecticide storage areas)
- cleaning and painting
- hazardous waste removal preparation activities (coordination with vendor)
- insecticide management (receiving of large inventory deliveries)
- training (including Operations training, Right-to-Know Law, etc)
- preparations for internal inspections
- snow removal when necessary

Office:

- review of complain call/fieldwork accomplished data bases for accuracy necessary for data analysis
- preparation of GIS data/overlays for next season aerial/ground larval control applications including meeting with contracted helicopter company/pilots
- securing permission for aerial landing zone sites, review of aerial vendor insurance documents, etc.
- review of and analysis of previous season surveillance data as feedback for next season larval/adult control efforts
- revision of endangered species habitat GIS layers as well as other exempt locations such as schools, daycares relative to the Children and Family Protection Act (these overlays are incorporated into the ULV units GPS navigation systems)
- staff training including attendance of regional and national mosquito control conferences as well as preseason strategy sessions with SRMCB & MDPH
- schedule time during off season with computer software/hardware vendors for off season maintenance of computer systems/software/network

The scheduling of these activities, although necessary each year, is usually reserved for extreme weather events such as heavy snow events and/or periods of extreme temperatures. The majority of the off season work is in support of the water management program. This involves the monitoring of/hand clearing of/brushing of and/or mechanized excavation of mosquito ditches. Even during extreme freezes work can normally continue in coastal salt marsh locations due to the lack of frozen conditions found year round in these areas.