



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Deval L. Patrick  
GOVERNOR

Timothy P. Murray  
LIEUTENANT GOVERNOR

Ian A. Bowles  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1181  
<http://www.mass.gov/envir>

May 14, 2010

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
SECOND ENVIRONMENTAL IMPACT REPORT UPDATE

PROJECT NAME : Mosquito Control Program  
PROJECT MUNICIPALITY : Statewide  
PROJECT WATERSHED : Statewide  
EOEA NUMBER : 5027  
PROJECT PROPONENT : Department of Agricultural Resources - State Reclamation  
and Mosquito Control Board  
DATE NOTICED IN MONITOR : October 7, 2009

As Secretary of Environmental Affairs, I hereby determine that the Second Environmental Impact Update Report (2<sup>nd</sup> EIR Update) submitted for this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

Project Description

The goals of this programmatic review are: to evaluate past and current mosquito control practices; to identify and act upon new information derived from the monitoring activities conducted by the State Reclamation and Mosquito Control Board (SRMCB) (the Proponent) and others; to improve the Proponent's existing freshwater, open marsh, and chemical mosquito control activities based upon the new information gathered; and to ensure that the public health is protected and to ensure impacts to the environment are minimized.

The SRMCB exercises mosquito control responsibilities for 193 municipalities located in nine mosquito control districts (MCDs) throughout Massachusetts (Berkshire County, Bristol County, Cape Cod, Central Massachusetts, East Middlesex County, Norfolk County, Plymouth County, Suffolk County, and the Northeast Massachusetts Mosquito Control and Wetlands Management District (formerly Essex County MCD). The SRMCB is comprised of one representative each from the Department of Environmental Protection (MassDEP), the Department of Agriculture Resources (DAR) and the Department of Conservation and Recreation (DCR). MCDs respond to mosquito problems using an Integrated Pest Management (IPM) approach that involves proactive and reactive mosquito control treatments including biological control methods such as open marsh water management (OMWM) to increase fish and birds on salt marsh areas and inland wetland management to increase water flow and reduce the potential for mosquito breeding in freshwater wetlands, and the use of pesticides such as environmentally acceptable larvicide (pesticides that impact the immature mosquito) and adulticides (pesticides that impact adult mosquitoes). The scope and type of mosquito control activity used can differ from one MCD to another due to differences in geographic location, topography, budgets, and mosquito species.

### Project History

The Proponent originally submitted a GEIR filing to the MEPA Office in 1998 to incorporate, in a single document, available information on the methods and environmental impacts of mosquito control and eradication in Massachusetts. The GEIR focused primarily on salt marshes, their respective pest mosquito problems and the effectiveness of related mosquito control activities. The Secretary's Certificate on the GEIR (December 18, 1988) reflected the purpose of the GEIR and required the Proponent to provide annual updates to supplement the GEIR with additional information to document the effectiveness of the Proponent's mosquito control techniques and their impact on the environment.

The Proponent submitted the first annual GEIR Update Report on November 26, 2007 that included best management practices (BMPs) and operational guidance for mosquito control activities conducted in freshwater wetland resource areas. This GEIR Update provided important information pertaining to mosquito control activities in freshwater wetland resource areas in Massachusetts, but also served to illustrate the need for more comprehensive information about the effectiveness of the Proponent's mosquito control polices, projects and monitoring activities. The GEIR Update also included the Proponent's request that its future submissions be reviewed under the Special Review Procedures provided in the MEPA Regulations (301 CMR 11.09).

The Secretary's Certificate issued on February 15, 2008, established a Special Review Procedure (SRP) to replace the GEIR format and requiring the Proponent to continue its efforts in the form of an "EIR Update" report, its mosquito control polices, management practices and monitoring activities for freshwater, open marsh, and chemical mosquito control activities throughout the Commonwealth since the GEIR was published.

The Proponent submitted an EIR Update Report on November 10, 2008 that included documents and information that provided a brief and general description of the Proponent's ongoing freshwater, and chemical mosquito control activities. The first EIR Update Report did not include the additional information required in the Scope issued for the GEIR Update pertaining to the Proponent's workplan and schedule for developing additional information and procedures to monitor and evaluate the effectiveness of mosquito control activities and their impact on the environment. A Secretary's Certificate was issued for the EIR Update Report on January 16, 2009 and determined that the project required further MEPA review. The Proponent was required to submit a 2<sup>nd</sup> EIR Update report to the MEPA Office to include a description of the Proponent's Open Marsh Water Management (OMWM) mosquito control best management practices (BMPs), plans to monitor the results of its mosquito control activities, and a proposed plan for publishing future annual reports of the Proponent's mosquito control program activities. The Proponent was also required to include in the 2<sup>nd</sup> EIR Update a response to the comments received on the first EIR Update.

### REVIEW OF THE SECOND EIR UPDATE REPORT

The second EIR Update Report includes documents and information that provide an overview of the Proponent's ongoing freshwater, open marsh and chemical mosquito control activities.

The second EIR Update includes the following documents and information:

1. Comprehensive document titled "Update to the 1998 Mosquito Control Program Generic Environmental Impact Report (GEIR) EOEEA #5027" that addresses, evaluates, and reviews mosquito control practices including Integrated Pest Management (IPM), reviews current literature, and describes current monitoring programs of mosquito control projects;
2. Freshwater Best Management Practices (BMP) document titled "Mechanized Wetland Management Activity Post Monitoring Guidance" for mosquito control activities conducted in freshwater wetlands;
3. An Open Marsh Water Management (OMWM) Program report titled "Open Marsh Water Management in Northeastern Massachusetts from 1998-2008: A Ten Year Review";
4. The SRMCB's "Response to Comments" which addresses comments received on the November 2008 1st EIR update and includes copies of all comment letters cited at the end of the Secretary's January 16th Certificate;
5. 2008 Annual Reports of the 9 mosquito control district's (MCDs) projects; and

6. The following additional documents were provided in response to comments and to provide a complete record of significant actions by the Board since 1998:
- the Cranberry Sampling Study for Anvil 10+10 Southeastern Massachusetts prepared by the Center of Environmental Health MA Department of Public Health;
  - Memorandum of Understanding Between the Division of Fisheries and Wildlife and the Department of Agricultural Resources;
  - State Reclamation and Mosquito Control Board Mosquito Misting Systems Position Statement;
  - Adult Mosquito Control Pesticide Label Compliance Policy Pertaining to the Protection of Bees by the State Reclamation and Mosquito Control Board;
  - Methoprene, A review of the impacts of the insect growth regulator methoprene on non-target aquatic organisms in fish bearing waters (Ver. 2.0) for the Massachusetts Pesticide Board Subcommittee;
  - State Reclamation and Mosquito Control Board Administrative Policies such as the Employee Time Off Policy, Budget Policy, Budget Q & A, Motor Vehicle Accidents, and Commissioner Indemnification;
  - Adult Mosquito Control Intervention Parameters, and Scientific Data to Support Effectiveness of Spraying; and
  - Massachusetts Mosquito Fact Sheet.

#### Open Marsh Water Management (OMWM)

As described in the 2<sup>nd</sup> EIR Update, the Proponent has been working closely with the Massachusetts Office of Coastal Zone Management (CZM) and others to revise its current salt marsh mosquito control practices in response to the comments received on the first EIR Update pertaining to the potential impacts of the Proponent's mosquito control activities to salt marsh and estuarine resource areas. In October 2008, the OMWM Monitoring Standards Workgroup was formed comprised of representatives from four MCDs, the SRMCB, CZM, MassDEP, the Natural Heritage and Endangered Species Program (NHESP), Division of Marine Fisheries (DMF), and MassAudubon to assist the Proponent with the final design of proposed revisions to the Proponent's OMWM Best Management Practices (BMPs), operational protocols and standards for mosquito control activities conducted in open marsh resource areas in Massachusetts. According to the comments received from CZM and others on this 2<sup>nd</sup> EIR Update, the OMWM Monitoring Standards Workgroup has proposed recommended modifications to the OMWM program that include revisions to mosquito control BMPs, policies and standards, a post-mosquito control monitoring program, and the use of geographic information systems (GIS) technology that will improve OMWM data keeping and information collected by MCDs to measure and report on the effectiveness of the Proponent's OMWM activities. The proposed OMWM program revisions will undergo field testing by each of the MCDs to determine their effectiveness and feasibility.

The Proponent has committed to continue to work closely with members of the OMWM Monitoring Standards Workgroup to complete the process to revise and implement the OMWM standards. The Proponent should work to complete this process as expeditiously as possible and should provide a copy of the updated OMWM Program Plan with the MEPA Office to be published in the Environmental Monitor regarding the availability of these standards when complete.

#### Mosquito Control Monitoring Program

The 2<sup>nd</sup> EIR Update document includes a description of the Proponent's ongoing post-mosquito control monitoring activities used to measure the effectiveness of the Proponent's mosquito control activities particularly as they pertain to chemical mosquito control treatments involving the aerial applications of larvicide and adulticide. MCDs routinely conduct post-treatment monitoring of aerial applications of larvicide and conduct random post-treatment monitoring of aerial applications of adulticide. The information collected from the MCDs post-treatment surveys is informally analyzed and used by each MCD to determine if additional mosquito control activities are warranted.

#### *Freshwater Management Monitoring*

The Proponent has recently completed the design and implementation of a post-treatment monitoring program for mosquito control activities conducted in freshwater wetland resource areas. The BMPs for the Proponent's Freshwater Management Program have been revised to include standardized monitoring protocols to evaluate the effectiveness of the Proponent's BMP activities on mosquito density in freshwater wetlands.

#### *Open Marsh Water Management Monitoring*

As described above, the Proponent has been working closely with the OMWM Monitoring Standards Workgroup to finalize revisions to the OMWM BMPs that will include post-mosquito control monitoring protocols and standards to evaluate the effects of Open Marsh Water Management alterations on mosquito reduction and on salt marsh resources. According to the comments received from CZM, the proposed revisions to the OMWM Program include modifications to BMPs and post-treatment monitoring protocols and the use of GIS technology that will provide sufficiently detailed information upon which to evaluate the impacts of the Proponent's OMWM program on mosquito populations and coastal resources.

#### Mosquito Control Program Annual Review

The 2<sup>nd</sup> EIR Update report contains a discussion of the Proponent's commitment to provide an annual report of mosquito control activities in Massachusetts. The Proponent will be responsible for the electronic publication of an annual report of the mosquito control and

monitoring activities conducted in each of the nine MCDs. At a minimum, the annual mosquito control report should include mapped mosquito breeding locations, locations receiving chemical and non-chemical mosquito control treatment and any post-treatment monitoring results produced by each MCD. The Proponent will ensure that hard copies of the annual mosquito report will be provided to all MCD-member Boards of Health and will be published on the Proponent's website. Hard copies of the annual reports should also be provided to the public libraries for the Towns located within the nine MCDs. A copy of the Proponent's annual report on mosquito control in Massachusetts should also be forwarded to the MEPA Office for publication in the Environmental Monitor. The Proponent has committed to convene one annual public meeting in each of the nine MCDs, concurrently with the publication of the annual mosquito control report, to invite public review and comment of the Proponent's mosquito control program and monitoring results. The Proponent should forward the schedule for these annual MCD public meetings to the MEPA Office for publication in the Environmental Monitor.

### Ongoing Environmental Review and Monitoring Efforts

#### *Database Development*

As described in the 2<sup>nd</sup> EIR Update, MCDs have added or are adding capacity for GIS technology as funding permits. The Proponent and the MCDs must work to increase the technological capacity of each MCD to map treated areas, identify the type and amount of pesticide used at each location, and monitor and evaluate the effectiveness of their respective mosquito-control activities. The mosquito control data produced by each MCD should be incorporated into a single publically accessible GIS-based mosquito control mapping database that will enable the Proponent and others to identify mosquito breeding sites, sites receiving chemical and non-chemical mosquito control treatments, and the results of any post-treatment monitoring conducted for these treatment sites.

#### *Inter-Agency Coordination*

A number of State agencies including CZM, MassDEP and the Massachusetts Department of Public Health (DPH) have offered to work with the Proponent and the MCDs to identify opportunities to coordinate agency resources in the areas of GIS-based database development and wetlands ecology monitoring. The Proponent should commit to work closely with the state permitting and resource agencies to identify and implement opportunities to coordinate agency resources to ensure the development of a comprehensive and consistent program of mosquito control activities and monitoring protocols and standards in Massachusetts. I will consider the comments received from the Watershed Action Alliance of Southeastern Massachusetts to expand the composition of the State Reclamation and Control Board to include representatives from the DPH and the Department of Fish and Game. The Proponent should also commit to work closely with MassWildlife's Division of Ecological Restoration (DER), watershed associations and conservation commissions to identify opportunities for ecological restoration projects

involving the removal of obsolete dams or other barriers to fish passage to improve habitat for fish predators.

### *Public Education and Ecological Restoration*

I appreciate the comments received from the Massachusetts Association of Conservation Commissions (MACC), MassAudubon, the Watershed Action Alliance of Southeastern Massachusetts and the Jones River Watershed Association, I and ask that the Proponent review these comments carefully and identify opportunities for enhancing the use of public education and ecological restoration as significant elements for minimizing and controlling mosquito development within the mosquito control program's IPM framework. The Proponent must work more closely with local Boards of Health and Departments of Public Works in each MCD community to implement additional measures for minimizing and controlling mosquito development including; the removal of discarded tires, the removal of blockages in streams caused by excessive roadway sedimentation or illegal dumping, upgrading culverts to improve fish passage and working with municipal officials to adopt and enforce Low Impact Development (LID) techniques for stormwater management in new developments to avoid creation of new mosquito habitat.

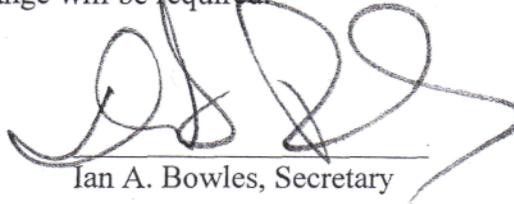
### *Larviciding*

According to the Proponent, MCDs routinely inspect confined wetlands resource areas suspected for mosquito breeding sites to determine the need for applications of larvicide (Bti, methoprene) to control larval mosquito populations. The larvicide application of Bti may reduce 90% or more of the on-site larvae population. A number of commenters have expressed concern with the Proponent's use of methoprene in larvicide applications and its potential impacts to non-target organisms including lobsters, blue crabs and mysid shrimp. I ask that the Proponent work closely with the MCDs and consult with local watershed associations and conservation commissions to identify opportunities to minimize or eliminate the use of methoprene in larvicide applications particularly in coastal resource areas.

### Conclusion

After a thorough consideration of the comments received, I find that the Proponent has implemented or committed to implement mosquito control program modifications designed to generate new useful information that will be used to continually improve the Proponent's mosquito control efforts and ensure the protection of public health and the environment. Subject to the conditions outlined in this Certificate, I am satisfied that any outstanding issues relating to the Proponent's mosquito control activities will be fully considered and addressed as part of the Proponent's annual program review process. No further MEPA review is required at this time.

Should the SRMCB implement any significant changes to the policies and procedures reviewed in this Second EIR Update, it should consult with the MEPA Office to determine whether a Notice of Project Change will be required.



Ian A. Bowles, Secretary

May 14, 2010

DATE

Comments received:

December 8, 2010	Tom Purcell, Director of Public Health, Town of Webster
December 9, 2010	Connecticut Department of Environmental Protection
December 17, 2010	Boxborough Board of Health
December 30, 2010	Connecticut Department of Environmental Protection
January 4, 2010	Town of Swansea
January 5, 2010	Northeastern Mosquito Control Association, Inc.
January 8, 2010	Town of Fairhaven
March 24, 2010	Margaret E. Sheehan, EcoLaw Massachusetts
March 25, 2010	Martha Dansdill
March 25, 2010	Town of Yarmouth
March 25, 2010	Robert W. Burkhardt
March 25, 2010	PollyBradley, Nahant SWIM, Inc.
March 26, 2010	MassAudubon
March 26, 2010	Town of Wellfleet
March 26, 2010	Jones River Watershed Association
March 26, 2010	Massachusetts Department of Environmental Protection (MassDEP)
March 27, 2010	Massachusetts Association of Conservation Commissions
April 15, 2010	Harvard School of Public Health
April 16, 2010	Massachusetts Coastal Zone Management
April 22, 2010	Watershed Action Alliance of Southeastern Massachusetts
May 7, 2010	Massachusetts Department of Public Health (DPH)