

NORTH SHORE MOSQUITO ABATEMENT DISTRICT

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Northfield, IL 60093

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NPDES Permit ILG87

PESTICIDE DISCHARGE MANAGEMENT PLAN (PDMP)

PDMP Team

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Problem Identification

The NSMAD controls public health risk and nuisance mosquitoes found within our District, through a fully Integrated Pest Management Program. The utilization of adult mosquito monitoring devices and visual larval surveillance are used to determine the best course of action for each particular situation. Our larval and adult mosquito control consists of the two following habitats.

A. Urban

- Catch basins and Storm drains
- Residential containers
- Unmaintained pools and ponds
- Retention ponds
- Dense vegetation
- Drainage ditches
- Construction sites
- Open Fields

B. Forested

- Flooded woodlots
- Roadside ditches
- Bicycle Paths

Action Threshold(s)

Pest Problem Description:

Mosquitoes are the pests of concern and can be categorized in two main groups, nuisance mosquitoes and public health risk mosquitoes. Of the 30-plus species of mosquitoes found in the North Shore Mosquito Abatement District, those of main concern include the West Nile Virus (WNV) and Saint Louis Encephalitis (SLE) vectors *Cx. pipiens* and *Cx. restuans*, the LaCrosse Virus (LACV) vector *Ae. triseriatus* and the floodwater nuisance species *Ae. vexans* and *Ae. trivittatus*. These mosquitoes are most commonly found in traps throughout the district and are the main cause of public health risk and quality of life issues to residents of the district.

Action threshold summary

In order to decrease the probability of mosquito and vector borne diseases and minimize the impact on the quality of life from nuisance mosquitoes, the NSMAD works to reduce and manage the mosquito population within the district through various forms of control including source reduction, larval control and adult mosquito control.

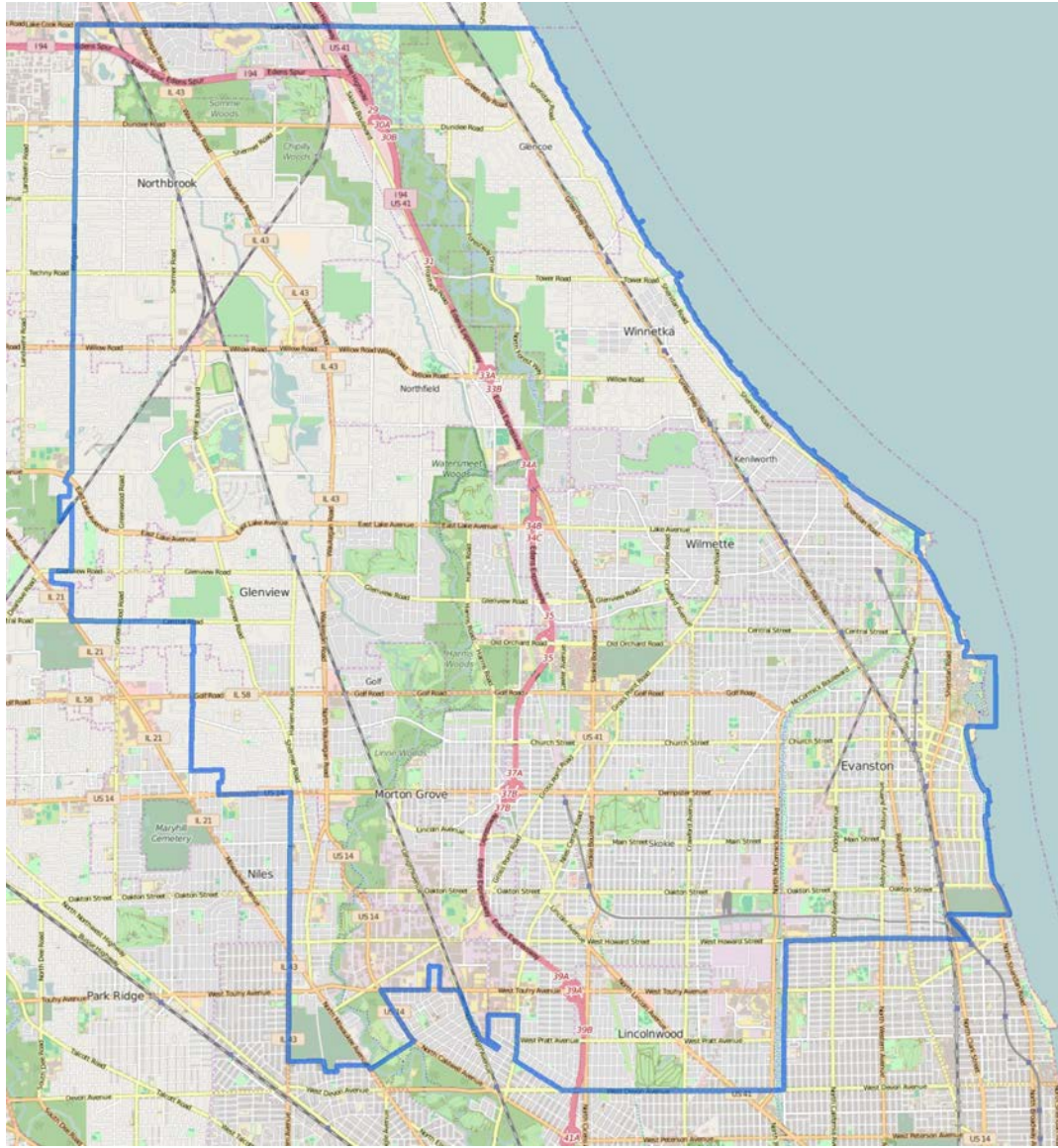
Action thresholds for larval control are based on institutional knowledge and experience, weather conditions and larval surveillance in known mosquito habitats. If average counts of 1-5 larvae are seen in a dip sample, a larvicide application is warranted. Other factors taken into consideration include temperature, short and long term weather conditions and whether the breeding source can be immediately removed or reduced. Seasonal temperature and precipitation patterns are used to determine the beginning of larval control in catch basins and off-road sites.

Action thresholds for adult mosquito control are based on quantifying mosquito abundance and the WNV infection rate in mosquitoes to estimate the potential health risk to the public. Monitoring adult mosquito population density is accomplished by examining specimens collected in a network of traps placed throughout the district. Two types of traps are used. Gravid traps operate 24/7 at 16 locations throughout the district and are collected three times per week. All mosquitoes collected are identified and counted. These counts indicate the population density of WNV vector mosquitoes in the area. The *Culex* mosquitoes found in the gravid traps are tested for the presence of WNV via RAMP and/or PCR-based testing at the NSMAD lab. New Jersey light traps that collect mosquitoes actively seeking hosts are located at

9 sites throughout the district. The traps are run 24 hours a day, 5 days per week. The collections are retrieved once weekly and the mosquitoes are identified and counted. The light traps provide a measure of the population density of important nuisance mosquitoes such as *Ae. vexans*, that can occur in large numbers early in the season and following heavy rains. In addition to the standardized collecting, identifying and testing of mosquitoes from our surveillance program, resident reports of local biting mosquito problems are taken into consideration and provide a valuable complement to the other parameters evaluated as action thresholds for adult mosquito control.

General Location Map

Waterways located within the treatment area are: North Branch of Chicago River, Skokie River and Skokie Lagoons.



Water Quality Standards

Waters (North Branch of Chicago River, Skokie Lagoons and Skokie River) are not impaired by any substance which is either an active ingredient in the pesticide to be discharged nor a degradation of such an active ingredient.

Pest Management Options Evaluation

Prior to first pesticide application in each area (Townships) evaluate considering impacts to water quality, non-target organisms, feasibility, and cost effectiveness.

Options (one or in combination):

1. No action
2. Prevention
3. Mechanical or physical methods
4. Cultural methods
5. Pesticides
 - a. Larvicides
 - b. Adulticides

Pest Management Options (PMO)	Surveillance / Threshold	Application Method
No Action (Larval)	<ul style="list-style-type: none"> • Dip sample shows no signs of larvae present • Larvae predators present in habitat • Adverse weather is forecast 	N/A
No Action (Adult)	<ul style="list-style-type: none"> • Adverse weather is forecast • Environmental conditions • Mosquito population below threshold 	N/A
Pesticide Application (Larval)	<ul style="list-style-type: none"> • Weather or environmental conditions • Rainfall producing standing water in forested areas • Larval surveillance conducted by dip samples of standing water and containers holding water containing 1-5 larvae per dip on average • Seasonal temperature and precipitation changes warrant the beginning of larval control in catch basins and off road sites • Inspecting catch basins and other sources of stagnant water for breeding and larval activity • Institutional knowledge and experience • Inspecting known mosquito breeding habitats 	Hand or broadcast spreader application of either granular or briquet product using the application rates stipulated on the product labels. Broadcast application of liquid larvicide product via Buffalo Turbine or ULV spray equipment as stipulated on product label.
Source Reduction - Urban	<ul style="list-style-type: none"> • Property checks for mosquito breeding and larvae in pools, ponds, fountains and any other container with the ability to hold water • Larval dip counts looking for presence of mosquito larvae in containers. 	Removing and or emptying containers that hold water.
Source Reduction - Forested	<ul style="list-style-type: none"> • Weather conditions • Environmental conditions • Rainfall producing standing water in forested areas 	Flood prevention, removing and or emptying containers that hold water, ditch

	<ul style="list-style-type: none"> • Institutional knowledge and experience • Inspecting known mosquito breeding habitats 	clearing, debris removal, increasing flow of water.
Pesticide Application ULV (Adult Control)	<ul style="list-style-type: none"> • WNV positive mosquito pool found via RAMP or PCR test resulting in an infection rate $\geq 5/1000$ • WNV, SLE, EEE, or other vector /mosquito borne virus positive human, bird or other animal reported within the district or its border • High count or significant increase of public health risk mosquitoes (<i>Cx. pipiens</i>) in trap collection (daily average greater than 45 mosquitoes per trap for ≥ 2 weeks) • Resident complaints of mosquitoes. • High count or significant increase of nuisance mosquitoes in trap collection (daily average greater than 25 mosquitoes per trap) • Combination of precipitation and temperature per institutional knowledge and experience 	Ultra Low Volume (ULV) application of insecticide via hand or truck mounted spray equipment applied as stipulated on the product labels.
Pesticide Application Barrier (Adult Control)	<ul style="list-style-type: none"> • Resident complaints of mosquitoes • Public gatherings and events • Any combination of light trap counts, gravid counts, WNV or other positive pools of mosquitoes, dip samples or environmental and weather conditions • Areas inaccessible to truck ULV 	Insecticide applied to vegetation using a handheld or backpack sprayer as stipulated on the product labels.
Public Relations and Education	<ul style="list-style-type: none"> • Continual 	<ul style="list-style-type: none"> • Media Relations • Public Information Booth/Events • Website • Intergovernmental Agency Relations • Community Outreach • Social media • Email and SMS messaging

Response Procedures

Spill Response procedures

The following are the procedures for spill response management (adapted from Illinois Pesticide Applicator Training Manual SP39) .

1. Ensure appropriate personal protection is taken
2. Utilize supplied spill kit
3. Stop spill from spreading
4. Stop spill at the source
5. Inform Operations Manager as to nature of incident
6. Operations Manager will document all info regarding incident
7. Conclusions as to whether spill is of the size where further notification/remediation is required will be determined

Adverse Incident Response Procedures

An adverse incident is defined by the ILEPA as an unusual or unexpected incident in which an applicator has observed, discovered upon inspection or otherwise become aware in which:

1. There is evidence that a person or non-target organism has likely been exposed to a pesticide residue, and
2. The person or non-target organism suffered a toxic or adverse effect.

If an incident is determined to be adverse in nature, the NSMAD will, within 24 hours of the adverse incident, inform the IEMA and USEPA Region 5 Pesticide Program. An IEPA Adverse Incident Report will be filled out by NSMAD, and submitted as per NPDES Permit ILG87 guidelines.

SIGNATURE REQUIREMENTS

Permittee must sign, date and certify the PDMP in accordance with Appendix B

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Signature

Mark E. Clifton 1/7/2018

Print Name