



City of Seattle
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City of Seattle

West Nile Virus Response Plan

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Attachments

- Attachment 1: Addendum: West Nile Virus Staff
- Attachment 2: Mosquito Activity Report
- Attachment 3: City Department Larvicide Application Template
- Attachment 4: Facilities/Infrastructure Inspection Form

1.0 BACKGROUND

In February 2003, the City of Seattle adopted an Integrated Pest Management Plan for Mosquito Control (Seattle IPMP) outlining the City's general approach to managing the risks to human health and the environment from mosquito-borne diseases and mosquito control options in City operations. The IPMP advances reduction of mosquito bites through education and personal protection advice to City employees and reduction of mosquito breeding habitat on City property. The City revised the Seattle IPMP in late 2006.

When determined appropriate, the City will consider using larvicides to control mosquitoes on City-owned property. In order to preserve that option, the City has coverage under the Washington Department of Ecology (Ecology) general permit (NPDES Permit No. WAG-992005), which covers all mosquito control activities that discharge larvicides directly into surface waters of the state. The Seattle IPMP serves as the City's Best Management Practices for the City's individual coverage under the general permit.

Public Health – Seattle & King County (Public Health), the county lead for West Nile Virus (WNV) response coordination, has created *West Nile Virus Phased Response Guidelines for Cities & Agencies in King County* (Guidelines). The Guidelines detail the County's response strategy and suggests strategies for other jurisdictions and private lands. The three main components of the plan are surveillance, education, and control.

This document describes how, consistent with the Public Health Guidelines, the City will implement the Seattle IPMP, which may be amended over time. As with the Public Health Guidelines, the Seattle WNV Plan is flexible and is expected to be modified by the City as more information about WNV in the Seattle area is learned.

2.0 INTRODUCTION

Mosquito-borne diseases pose both human health and environmental risks. While mosquitoes have long been potential vectors for diseases including St. Louis encephalitis, West Nile virus has become an increasing concern. First detected in the eastern United States in 1999, West Nile virus has spread rapidly to the west coast. Mosquito control efforts have not been successful in stopping the spread of the virus across the country.

3.0 APPROACH

The City of Seattle recognizes that West Nile virus poses risks to human health and the environment, and the City intends to undertake prudent measures to mitigate that risk on or near City property and facilities, potentially including the judicious use of larvicides. However, the City will not use larvicides in treated drinking water such as drinking water in a reservoir. In addition, the City will not use larvicides within its watersheds unless approved by the SPU director on a case-by-case basis.

Seattle's overall approach is based on the assumption that the following general management steps are the most effective:

- 1) Conduct City employee education to increase awareness of risks, risk reduction steps, and personal protection.
- 2) Support Public Health's education and outreach focused on the steps City residents can take to reduce breeding habitat and mosquito bites.
- 3) Monitor Public Health surveillance of West Nile virus outbreaks in wildlife and humans and monitor surveillance conducted by public health agencies in the other counties where the City operates facilities.

- 4) Inventory certain major City owned or operated structures that may provide breeding habitat that cannot be readily reduced or needs regular maintenance to reduce breeding habitat.
- 5) Attempt to reduce breeding habitat in City facilities taking steps such as general facility housekeeping to eliminate unnecessary standing water.
- 6) If appropriate, encourage natural predators in potential mosquito breeding habitat, in accordance with state and federal requirements.
- 7) Use larvicide at the City's discretion after considering the prioritizing factors listed in Section 4.4.

The City may choose other methods permitted by Ecology's General Permit to control mosquitoes and will follow all applicable laws, rules and best practices in doing so.

4.0 IMPLEMENTATION

4.1 Organization

In order to coordinate the City's response to WNV, staff have been designated to perform the following functions:

Departmental WNV Coordinators

Responsible for defining procedures and identifying responsible parties to implement this plan at the departmental level.

There will be one WNV coordinator in each department that has property or employees who work in areas where mosquitoes are most likely to be biting. The Department of Neighborhoods and Human Services Departments also have coordinators as they regularly work with the public and with people over 50 who are at greater risk of developing more serious forms of West Nile Virus. See addendum "West Nile Virus Staff" for a current list of departmental coordinators.

WNV Communications

These staff are responsible for developing WNV communication plans and materials for employee information, public contacts, and media inquiries. A citywide lead for communications will ensure departmental communications leads have appropriate materials and strategic direction for West Nile Virus communications. Additional communications staff may be enlisted to assist the citywide lead as needed. See addendum "West Nile Virus Staff" for a current list of communications leads.

Departmental Safety Staff

Responsible for providing employees who work in areas where mosquitoes are most likely to bite with general information on WNV, on reducing mosquito bites and breeding habitat, and on selecting and using repellents. Repellent use is always at the discretion of employees.

Citywide WNV Coordinator

This person coordinates the City's WNV response. Responsibilities include:

- Developing the City's WNV Plan and evaluating and modifying the City's response as new information is learned
- Serving as the lead contact with Public Health, Washington Department of Health, and the Washington Department of Ecology
- Providing Departmental Coordinators and Communications Liaisons with timely information throughout mosquito season
- Monitoring NPDES permit compliance, including maintaining departmental pesticide application reports and submitting required reports and information to Ecology
- Providing City-generated surveillance data to Public Health
- Assessing the effectiveness of the City's response

See addendum “West Nile Virus Staff” for contact information for the citywide coordinator.

4.2 Education and Communication

Employee Education & Awareness

An all-employee e-mail will be sent providing general WNV information and emphasizing the steps that can be taken to reduce mosquito bites and breeding habitat. Frequently Asked Questions (FAQs) modeled after Public Health messages where appropriate will be included or attached to the e-mail. The FAQs provide information about WNV, including how it is spread, what the symptoms are, relative risk of getting sick, and measures to reduce risk.

Through safety and/or other staff, City departments will provide additional information to the following employees:

- Staff and supervisors who work in areas where mosquitoes are most likely to be biting
- Facility staff responsible for monitoring for and reducing sources of standing water
- Staff who work regularly with people over 50 and unsheltered homeless so they will know how to refer any questions from these groups who have been identified by Public Health as “at-risk populations.”

This additional information consists of City of Seattle FAQs for City Employees, which provide more specific information about the City’s response, information on selecting and using repellents, and other personal protection measures.

Public Outreach

As the lead WNV response agency for King County, Public Health will conduct the primary public education activities. Public Health has developed materials for distribution to the public and for partner agencies to distribute. The City will send utility customers information that reiterates the mosquito bite and breeding habitat reduction information developed by Public Health, in order to reinforce those messages.

When City staff are approached by the public regarding WNV, they are to refer the resident to the Public Health WNV hotline number. Calls with concerns about specific City property should be referred to the appropriate West Nile Virus Departmental Coordinator. If a call cannot be answered by referring to the Public Health hotline or referred to a specific department, the call should be referred to the Citywide WNV Coordinator (See addendum “West Nile Virus Staff” for contact information for the Citywide and Departmental coordinators, and Public Health WNV Hotline).

The Customer Service Bureau staff, City customer service representatives and others likely to receive calls from the public also will be provided with scripted responses to common questions and referral information as necessary. Where appropriate, printed materials the City generates for a public audience will include the Public Health West Nile Virus hotline number.

When customer service representatives or Customer Service Bureau staff receive a call from a resident:

- Scripted answers to general questions will be provided by WNV Communications Leads. Most calls should be referred to the Public Health hotline.*
- Questions about specific City facilities should be referred to the department that owns that facility via the Departmental WNV Coordinator.*
- If the responsible department cannot be determined, the call should be referred to the Citywide WNV Coordinator.*
- In the event of a disease outbreak, the utility call center, Customer Service Bureau or another alternate system may be established to respond to a large volume of citizen calls.

*See Addendum “WNV Staff” for contact names and numbers.

Surveillance

Surveillance of larvae and adult mosquito populations, avian mortality, confirmed equine and other cases of WNV, and human WNV cases is critical to determining appropriate response activities. As the lead WNV response agency for King County, Public Health will conduct the primary surveillance activities and coordinate and analyze surveillance activities conducted by other agencies. These activities include tracking limited larvae count data from cities and agencies within the county, adult mosquito trapping, dead bird collection and testing, human WNV case monitoring, and complaint tracking. City employees will notify Public Health when dead crows and other birds are found (see “Dead Crow Reports”). Departmental WNV Coordinators will notify Public Health and the Citywide WNV Coordinator of larvae dipping results and adult mosquito activity identified on City property.

Monitor and Collect Surveillance Data

Through subscription to the Public Health e-mail information service, the Citywide WNV Coordinator will monitor the incidence of West Nile virus in Washington State, King County and the City of Seattle to help determine when control measures, changes to the Seattle WNV Plan, or departmental procedural changes might be warranted. As the situation evolves, the Citywide WNV Coordinator will inform Departmental WNV Coordinators of changing circumstances, resulting risk levels, and consequent modifications to the Seattle WNV Response Plan.

Dead Crow Reports

To help learn more about West Nile virus, Public Health is tracking the deaths of crows, jays and ravens. Employees who find an intact recently dead bird, should call Public Health – Seattle and King County at **206-205-4394**. Employees should be prepared to provide the address where the bird was found and other details about the bird’s condition.

Larvae Breeding or Adult Mosquito Activity

If an employee suspects that there is a significant source of larvae or adult mosquito activity at a City facility or if the employee receives a complaint about a specific department facility, the employee should contact the WNV departmental coordinator in his/her department. See addendum “West Nile Virus Staff” for a list of departmental coordinators.

The departmental WNV coordinator will arrange to investigate the complaint. In the case of a disease outbreak where staff resources are limited, complaints may have to be prioritized for investigation either using the criteria in Section 4.4. “Site Considerations” or by implementing a departmental “decision tree” outlining prioritizing factors.

The Departmental WNV Coordinator shall fill out and transmit a Mosquito Activity Report for all investigated complaints. The information shall be transmitted to Public Health- Seattle & King County and to the Citywide WNV Coordinator within seven days of investigating a complaint (Attachment 2, Mosquito Activity Report)* and will include:

- Location of mosquito activity – address
- Source of complaint (name & number if other than an employee)
- Employee reporting the activity (name & number)
- How mosquito/larvae activity was confirmed (dipping, observation)
- Dip test results if applicable
- Action, if any, taken to reduce mosquito breeding potential or referral to another agency (any larviciding must be approved by the Citywide WNV Coordinator)
- If no action was taken, provide rationale

In the case of a disease outbreak and numerous complaints, alternative reporting may be implemented.

*See addendum “West Nile Virus Staff” for contact information for Public Health and the Citywide WNV Coordinator.

Inventory and Minimize Breeding Habitat

Departments will eliminate sources of standing water, if practical. This may include removing the source (e.g. moving materials that may collect rainwater to covered areas) or routinely eliminating the standing water.

Seattle Public Utilities, Seattle Parks and Recreation, Seattle City Light, Seattle Department of Transportation, Seattle Center, Fleets & Facilities, and Seattle Public Library will inventory selected structures and facilities that may provide mosquito breeding habitat which will be of ongoing concern throughout mosquito season (April through October). An example is equipment permanently located outdoors that collects rainwater. Department staff should routinely monitor inventoried potential breeding habitat, identify standing water issues, and, where feasible and practical, eliminate standing water or sample for the presence of mosquito larvae.

Facility staff should routinely check yards and areas around City buildings for new sources of standing water from April through October.

Routine Inspections of Inventoried structures and facilities

By May 1 each year, applicable departmental WNV coordinators are to submit to the citywide WNV coordinator an updated list of locations to be routinely monitored for standing water and mosquito breeding. Departments that determine they no longer have properties that need to be inventoried are to submit to the citywide coordinator an explanation stating that they examined their properties and found no ongoing standing water problems that need to be inventoried.

An initial round of inspections of inventoried facilities will be completed by June 1 each year. During the remainder of mosquito breeding season (through October 31), subsequent inspections of these facilities will occur within 7 days of a significant rain event which is likely to produce standing water that will not exchange within 7 days. Written or electronic reports of these inspections (attachment 4 or equivalent) will be submitted to the citywide WNV coordinator by the first of the month following the inspection date. (Example: inspections that occur in July will generate inspection reports to be submitted by August 1).

4.4 Control

Mosquito Management, Control, and Larviciding

It is the City’s policy to practice integrated pest management which favors pest prevention and natural controls over pesticide use. The City will work to reduce mosquito populations by reducing breeding habitat, encouraging natural predators where appropriate and in compliance with all applicable laws and regulations, and when control is necessary, targeting the larval stage of the life cycle with a range of options available at the City’s discretion including mechanical controls, biological pesticides, and chemical pesticides.

The City’s overall response strategy, including how control efforts will be prioritized, will evolve as the level of risk in the City changes based on surveillance data.

Factors for Determining Need for Mosquito Management and Control Measures

The following considerations may help determine if a specific facility, structure or location is a potentially significant source of mosquito activity and if the facility should be prioritized for possible use of management and control measures including larvicides.

Site Considerations:

- The site is not a natural system with natural mosquito and larval predators.
- Water on the site is not greater than three feet deep.
- There is no base flow or water that will exchange the water within seven days.
- The standing water does not drain a minimum of every seven days.
- There are not more significant sources of larvae present on adjacent properties.
- There is at least one mosquito larvae present per three dip samples of the water when sampling is required by the General Permit.
- A facility or site is adjacent to areas of evening outdoor activities, such as playfields.
- A facility or site is located in an area of concern with regard to the number and density of residents over 50 years of age.
- Larviciding has a reasonable potential to reduce mosquito populations in an area.
- Habitat reduction, facility modifications and/or mechanical controls to reduce breeding habitat potential are not practical or effective.
- Treatment costs are not prohibitive.
- Public Health has identified a significant concentration of dead crows or other birds or confirmed or suspected WNV cases nearby.

Wetlands and other natural areas provide a broad range of natural functions such as groundwater recharge, filtering of contaminated runoff water, flood protection, and wildlife habitat. Draining wetlands is not an option, and wetlands typically house populations of natural mosquito predators.

Larvicide Selection

If larvicides are used, the City intends to use the pesticide that is effective in controlling the mosquito population and that is the least toxic to non-target species and appropriate to the attributes of the site, except in response to documented development of resistance, in cases of effectiveness, or in a declared public health emergency.

The following is the list of products, in order of preference, which will be considered for use:

Bacillus sphaericus (H-5a5b)

Bacillus thuringiensis israelensis (Bti)

Methoprene

Monomolecular Surface Films

Paraffinic white mineral oil – this larvicide shall be used only in accordance with General Permit restrictions

Spills of pesticides will be promptly reported to the appropriate local and state authorities.

Larviciding Procedures

1. Departmental West Nile Virus coordinators or their designees are responsible for responding to complaints of mosquitoes on city properties in consultation with the citywide West Nile Virus coordinator.
2. Departmental coordinators, utilizing the prioritizing factors in section 4.4 and in accordance with the City's IPMP, will recommend whether to larvicide a particular city property.
3. Departmental coordinators or their designees will contact the citywide West Nile Virus coordinator for approval to larvicide.

4. If the citywide coordinator approves larviciding, the appropriate departmental coordinator will ensure larviciding takes place in compliance with the City's IPMP and NPDES permit requirements.
5. If larvicide is applied, the applicator will complete and maintain all legally-required larvicide application records. Departmental coordinators are responsible for ensuring timely completion and reporting of all application records required by NPDES Permit No. WAG-992005. Departmental coordinators shall complete the *City Department Larvicide Application Template* (attachment 3) and forward it electronically to the citywide West Nile Virus coordinator within seven business days of a larvicide application, unless other arrangements are approved by the citywide coordinator. In the case of systematic larvicide programs, such as seasonal treatment of catch basins, departmental coordinators shall record the larvicide application information in the *City Department Larvicide Application Template* and forward it electronically by the end of the treatment season to ensure timely records reporting to the Washington Department of Ecology.
6. If dip testing is conducted in conjunction with a larvicide application, the departmental WNV coordinator or designee will ensure the dip counts are recorded in the *City Department Larvicide Application Template* along with the larvicide application information.
7. In consultation with Public Health, the citywide WNV coordinator will determine in what format and timeline larvicide application information is provided to Public Health.
8. Departmental WNV Coordinators are responsible for developing their own departments' procedures for following these protocols.

West Nile Virus (WNV) Staff

Updated September 2007

Seattle Citywide WNV Coordinator

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Cell 206.240.8248
Fax 206.684.4631

Seattle Citywide WNV External Communications Coordinator

Colleen Schlonga, Seattle Public Utilities 206.233.3864

City of Seattle Departmental WNV Coordinators

City Light	Scott Powell	206.386.4582
Fire	Chief John Gablehouse	206.233.5154
Fleets and Facilities	Steven Vanderveer	206.684.5406
Human Services	Steve Hamai	206.684.7788
Information Technology	Jean Mayes	206.684.0513
Library	Rick Nishi	206.386.4158
Parks and Recreation	Barb DeCaro	206.615.1660
Planning and Development	Stacie Bonathan	206.684.8480
Police	Brian P.B. Nicholls	206.386.9797
Public Utilities	Shannon Kelleher	206.684.8745
Neighborhoods	Rich MacDonald	206.386.0088
Seattle Center	Beth Duncan	206.615.0364
Transportation	Roxanne Thomas	206.386.9060

Additional Departmental Contacts

Customer Service Bureau	Darby DuComb	206.684.8814
Mayor's Office for Senior Citizens	Irene Stewart	206.684.0492
Seattle Housing Authority	Virginia Felton	206.615.3506

Public Information Contacts

Customer Service Bureau	206.684.CITY
Public Health WNV Hotline	206.205.3883

Report Dead Crows, other select birds to Public Health 206.205.4394

**ATTACHMENT 1
WEST NILE VIRUS – MOSQUITO ACTIVITY REPORT**

Copies of this completed report shall be provided electronically to Citywide Coordinator Sheila Strehle, Sheila.strehle@seattle.gov and Public Health coordinator Leah Helms leah.helms@metrokc.gov

1. **Location of mosquito activity:** *(give address if possible, or nearest specific location)*

2. **City employee reporting the activity:**

Name: _____ Phone No: _____ Department: _____

3. **Person making the complaint:** *(if non-employee, i.e. resident, business, etc.)*

Name: _____ Phone No: _____ Organization: _____

Address: _____

4. **How was the mosquito/larvae activity confirmed?** *(Dipping, observation, etc.) If dipping occurred, what were the dip counts?*

5. **Describe action, if any, taken to reduce mosquito breeding potential or referral to another agency:**

6. **If no action was taken, provide rationale:** *(dip counts did not meet state threshold, natural area with predators, etc.)*

Name & Department: _____

Date: _____



City of Seattle
Facilities/Infrastructure Inspection Form

Date of Inspection: _____

Date of Last Rain Event: _____

City Department Performing Inspection: _____

Facility Inspected (*name of facility & address*): _____

Description (problems found, if any):

Problem Identified	Action Taken	Date Corrected
_____ _____ _____	_____ _____ _____	_____ _____ _____
_____ _____ _____	_____ _____ _____	_____ _____ _____
_____ _____ _____	_____ _____ _____	_____ _____ _____

Name of Inspector: _____

Name of Departmental WNV Coordinator: _____