

POLICY REPORT

Date: May 14, 2003
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TO: Vancouver City Council

FROM: General Manager of Vancouver Board of Parks and Recreation, City Engineer and the Director of Health Protection, Vancouver Coastal Health Authority

SUBJECT: West Nile Virus Surveillance and Mosquito Control Procedures for Vancouver

RECOMMENDATIONS

- A) THAT Council approve the Phase 1 Mosquito Surveillance and Control Plan (Table 1) with initial funding of \$35,000 to be provided from Contingency Reserve funds.**
- B) THAT the City Manager be authorized to initiate the larvicide treatment program should circumstances warrant such an action up to a maximum expense of \$100,000 with funding to be provided from Contingency Reserve funds.**

COMMENTS

The City Manager recommends A) and B).

POLICY

It is Council policy to protect public health.

PURPOSE

The purpose of this document is to seek Council approval for the attached Mosquito Surveillance and Control Plan to help protect the public against West Nile Virus.

BACKGROUND

West Nile Virus (WNV) was introduced to North America in New York in 1999 and has since spread to 44 of 48 continental states and 5 Canadian provinces. WNV is transmitted through the bites of some mosquito to humans and animals. According to the British Columbia Center for Disease Control, most people who become infected will experience no symptoms at all. About 20% of those infected will develop mild flu-like symptoms such as fever, headaches and body aches lasting about one week or less. In rare cases (less than 1%) WNV can result in serious health effects such as meningitis (inflammation of the lining of the brain) or encephalitis (inflammation of the brain) There is no evidence to suggest that WNV can be spread from person to person.

Many bird species can also be infected by WNV and members of the crow family have a high death rate when infected. WNV Infection in crows usually precedes any human illness and crow death from WNV is used as an indicator that the disease is present. WNV has not yet been detected in British Columbia but in October 2002, an infected dead crow was identified in Snohomish County, in western Washington. It is expected the virus may make its way into BC at some point this year.

DISCUSSION

The BC Centre for Disease Control (BCCDC) and the various Health Authorities (Vancouver Coastal Health Authority (VCHA) for Vancouver) across the province have begun working on a response plan against WNV, *The Arbovirus Surveillance and Response Guidelines for British Columbia*. This document outlines the activities needed to respond to the threat of WNV.

WNV Response Tree

The Canadian National WNV Steering Committee created a WNV response tree (updated February 2002). The following response levels will help determine which monitoring and/or abatement activities may be required.

- LEVEL 0
S No confirmed WNV infection in a bird, animal or mosquito pool and WNV activity is unlikely
- LEVEL I
S No confirmed WNV infection in a bird, animal or mosquito pool and WNV activity is possible or the risk is unknown
- LEVEL IIa
S Based on an assessment of risk following WNV detection in a jurisdiction in the previous year or in a neighbouring jurisdiction in the current year
- LEVEL IIb
S Based on an assessment of risk following WNV detection within a jurisdiction in the current year
- LEVEL III
S Detection of a single or multiple human case(s) of WNV infection (with no history of travel to an area with confirmed WNV activity within 21 days of onset of symptoms) in the current year within a jurisdiction

As of May 2003, British Columbia is at LEVEL IIa. Based on this, specific surveillance and/or control activities are warranted.

Mosquito Surveillance and Control Plan for the City of Vancouver

Given the possible occurrence of WNV in the Lower Mainland, it is becoming critical to develop a Response plan specific to the City of Vancouver. The BCCDC Ministry of Health Planning and VCHA have determined that certain aspects of mosquito monitoring and abatement fall under the Municipality's responsibility. As such, working with the VCHA staff have recommended procedures based on the response levels developed at the National level.

The Mosquito Surveillance and Control Plan has been developed in cooperation with the Vancouver Park Board (VPB), The City of Vancouver Engineering Services (COV) and the VCHA. During the implementation COV and VPB will focus on lands and infrastructure under City's control; VCHA will focus on private properties. The plan is staged and the 2003 plan is presented in Tables 1 and 2.

Goals of the Program

The goals of the program for 2003 include:

- Identification of the mosquito species present in Vancouver
As not all mosquito species are WNV disease carriers, this will help in directing prevention and treatment activities.
- Determination of mosquito population distribution and size
This will also help in directing prevention and treatment activities, as necessary.
- Development of protocols for WNV and mosquito management
- Implementation of larvae control program - a decision by the City, in consultation with or as result of an order from, the VCHAs Medical Health Officer, will need to be made as to whether initiation of this program should await Stage 2b or 3 or whether it should be pro-active in known mosquito areas.

Program Development and Evaluation

The Mosquito Surveillance and Control Plan for the City of Vancouver will be continuously reviewed and updated throughout 2003. Staff will seek expertise in academic circles, our neighbouring municipalities (GVRD) and in the lead agencies (BCCDC and VCHA) for this task.

TABLE 1: Mosquito Surveillance and Control Plan Phase 1 for the City of Vancouver for 2003

Stage	Activity	Timing	Lead Responsibility	Comments
SURVEILLANCE	Monitoring WNV	Now	BCCDC	
	City and Parks Staff Education	May	VPB COV	Parks IPM Coordinator and OH&S Engineering Superintendent to develop employee fact sheet and crew talk on WNV
	Bird Collection and Testing	May	VCHA	City & Park staff will be instructed in the proper procedures for reporting and handling dead birds

	Identification of Potential Mosquito Breeding Site in Vancouver	May	COV VCHA	Water bodies are being mapped in GIS
	Adult Mosquito Collection, ID and Testing	May - July	VCHA BCCDC	Trap(s) to be placed in specific locations throughout the city
	Mosquito Larval Monitoring	May - July	VPB COV	<ul style="list-style-type: none"> - 1 IPM person will need to be hired to run the monitoring program - 1 vehicle will also be needed - Estimated cost for 4 months in 2003: \$25,000
PREVENTION	Standing Water Complaints	May	VCHA	Educational approach but could require ordering removal under Health By-law
	Education Pamphlets and posters	May	VCHA	Pamphlets on City & VCHA websites and also distributed through various means (resident's associations; community centres, libraries)

	Communications	As needed	COV VPB	<ul style="list-style-type: none"> - Need to develop message regarding City WNV program - Respond to public inquiries possible: creation of a Hotline - Weekly departmental updates to COV WNV coordinator
MODIFICATION OF STANDING WATER	Catch Basins	As required	COV VPB	Significance of these sites as breeding areas to be determined
	Standing Water Under COV/PB Control	As required	VPB COV	Disruption of mosquito breeding sites by various means (restricted by Ministry of Water, Land and Air protection and impacts on habitat).
TREATMENT	Larvicide Treatment Vectobac (Bti) for most applications; Altosid (methoprene growth regulator) may be preferred for catch basins.	Spring - Summer	COV VPB	<ul style="list-style-type: none"> - May be done internally with existing staff (will require training) or may be contracted out - Will require Pesticide Use Permit (may be able to work under VCHA's permit) - Estimated cost for 2003: \$10,000-100,000 (will depend on size of area to be treated)

TABLE 2: Mosquito Surveillance and Control Plan Phase 2 for the City of Vancouver for 2003

TREATMENT	Adult Mosquito Treatment	If necessary	COV VPB	Only if Medical Health Officer declares a health emergency and requires adulticiding. The risks of ground or aerial application of e.g. malathion have to be compared to risks of WNV infections in the community.
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As noted the plan is a progressive in its intensity. The initial stages are focussed on information and surveillance, and larvae controls may have to be stepped up to include the application of larvicides . In an extreme situation the application of insecticides to control adult mosquito populations (as described in Table 2) may become necessary.

Implementation of larvae control measures would be based on the advice of or as an order from the Medical Health Officer. Since the timing of this portion of the program cannot be predicted, and Council could be in its summer recess, authority to proceed if deemed necessary is also requested at this time. Recommendation B authorizes the City manager to initiate the program should circumstances warrant such an action. The costs associated with this portion could range anywhere from \$10,000 to \$100,000 depending on the extent of larvicide applications. Larvicides would be applied to standing water in ponds, ditches and catchbasins.

Two larvicides are recommended Vectobac (Bti) and Altosid (methoprene growth regulator). Bti (*Bacillus thuringiensis* var *israelensis*) is a biological agent, which is highly specific to mosquito larvae. Bti is available in granular or spray form. Altosid is a chemical insect growth regulator and it would be used in catchbasins only. Since it does have potential environmental impacts, it cannot be used in those catchbasins discharging directly on fishbearing streams.

Implementation of an adult mosquito control program would be subject to further authority from Council or an order from the Medical Health Officer. It is considered unlikely that this stage of program may need to be implemented in 2003.

The Park Board has an Integrated Pest Manager on staff and this person would be the coordinator of activities by both the City Engineering and Park Board crews. At all times the coordinator would work closely with the Medical Health Officer for the Vancouver Coastal Health Authority. In order to conduct the surveillance consistently and effectively, a staff person would be hired for up to 4 months to sample water for larvae in standing water, ponds and catch basins, to record the results and forward these to the Health Authority on a regular basis. Staff time, rental vehicle and office expenses amount to \$25,000.

The Park Board IPM's coordinator has also been assigned to develop a strategy to reduce the use of pesticides on private property and is now taking on the WNV coordination. This requires some backfilling in order to carry out the regular duties of the position and \$10,000 is requested for this purpose.

Financial Implications

The financial implications of the surveillance, prevention, modification of standing water phases of the work are \$25,000 as described elsewhere in this report. Backfilling for the Park Board Integrated Pest Management Coordinator is \$10,000. The larvicide treatment phase of the work, if it arises may cost anywhere from \$10,000 to \$100,000 to cover the costs of materials, staff training, staff time for application or alternately the retention of a contractor. Staff would report back to Council once a figure could reasonably be estimated. The source of funding for these expenditures is the Contingency Reserve.

CONCLUSION

The West Nile Virus is a significant potential threat to public health and the coordinated program developed jointly by the Vancouver Coastal Health Authority, City Engineers and Park Board provides the initial response to deal with the situation.

General Mgr./Dept. Head:

Report
dated:

May 14, 2003

Date: May 14, 2003

Author:

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257-8463

This report has been prepared in consultation with the departments listed to the right, and they concur with its contents

Concurring Departments

Vancouver Coastal Health - Nick Losito

Engineering Dept. - Don Brynildsen

Finance Dept. - Annette Klein
