



## Staff Report

### Origin

Staff have been in discussions with Richmond Health Services (RHS) concerning the Western Nile Virus (WNV), which has the potential to impact Richmond commencing Spring, 2003. As a prevention initiative, we have discussed with RHS some actions to control the potential transmission of this disease. RHS has proposed a comprehensive mosquito control program, as outlined in Attachment 1. This report presents their proposal and recommends RHS be retained to carry out a comprehensive mosquito control program for Richmond.

### Analysis

#### West Nile Virus

As part of our present agreement with RHS, they are retained to undertake mosquito control work on Sturgeon Banks from Garry Point to Terra Nova, at a cost of approximately \$11,000 annually. This work does not, however, include a broader City-wide program for control of mosquitoes in other areas of Richmond. With the potential for spread of West Nile Virus (WNV) to this area in the Spring/Summer of 2003, consideration for an expanded mosquito control program is warranted at this time. This is particularly relevant for Richmond, where there are a number of potential mosquito breeding areas, i.e. ditches, etc.

West Nile Virus is a mosquito-borne virus, normally passed between mosquitoes and birds. Humans can be infected with West Nile through the bite of an infected mosquito. The virus can also be transmitted to humans through blood transfusion, organ donation, etc. Most people infected with the virus will experience no symptoms at all. About 20% of those infected will develop mild flu-like symptoms lasting a week or less, including fever, head and body aches, rash, and perhaps swollen lymph glands. In less than 1% of cases, the virus can cause meningitis (inflammation of the lining of the brain and spinal cord) or encephalitis (inflammation of the brain). For unknown reasons, people over 50 years of age are most at risk for severe illness. In areas where mosquitoes do carry the virus, less than 1% are infected. If bitten by an infected mosquito, less than 1% of people who become infected will become severely ill.

The first case of West Nile Fever from the virus was detected in New York in 1999 (the first outbreak ever to be confirmed in North America). A second outbreak occurred in New York in 2000, and also spread to New Jersey and Connecticut. Since then, the virus has been detected in dead birds, mosquitoes, horses and other animals in most U.S. states. In Canada, during 2002, the virus was detected in Nova Scotia, Quebec, Ontario, Manitoba and Saskatchewan. Last year, the virus was identified in a crow in Washington State near the B.C. border.

In light of this information, the Medical Health Officer (MHO) for Richmond has advised that the virus has the potential to spread to this area commencing in the Spring, 2003. As a prevention measure to reduce the health impacts associated with this virus, the MHO is recommending a comprehensive mosquito control program in Richmond (see Attachment 2). This would include the identification of the mosquito species currently found in Richmond, and identifying the breeding sites of same. The MHO advises that the type of mosquito currently

present in City ditches is the same species that has been implicated in WNV transmission in the U.S., specifically New York State and Louisiana.

The comprehensive mosquito control program would include identification of all breeding sites for mosquitoes that have the potential to transmit WNV, monitoring of these sites on a weekly basis throughout the breeding season, and undertaking treatment as required. The principal control measure used would be larviciding of breeding areas to prevent the hatching of mosquitoes, supplemented by adulticiding if necessary. In the event adulticiding is necessary, RHS would require some limited additional support from the City, i.e. use of a City vehicle.

The application of an approved pesticide, such as malathion or pyrethrins, would be used. These pesticides are approved in both Canada and the United States and are safe if used according to label instructions. As part of this work, the MHO's office would undertake all necessary work, including securing necessary permits, approvals, certifications, etc. Under their mandate, MHO assumes all responsibility for public educational material relating to mosquito control and the transmission of WNV. They will coordinate media releases and respond to public complaints and concerns.

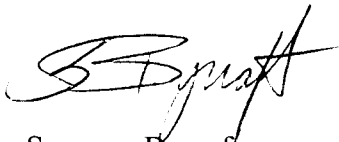
The cost to carry out the comprehensive mosquito control program is \$100,000. This cost represents staffing, operating and supply costs associated with the monitoring and treatment program proposed.

#### **Financial Impact**

There is currently no dedicated funding source for mosquito control beyond what is already included in our current agreement with RHS. It is recommended that the \$100,000 required for this expanded program be funded in 2003 from the Council provision account.

#### **Conclusion**

The potential spread of West Nile Virus to our area, combined with the fact that Richmond has a number of potential breeding sites for mosquitoes, gives rise to consideration for a comprehensive mosquito control program in 2003. The approach outlined in this report, and as proposed by RHS, would serve as a prevention program designed to mitigate the spread of West Nile Virus in Richmond. Timely approval of such a program is required in order to control the issue in time for the mosquito breeding season.



Suzanne Bycraft  
Manager, Emergency & Environmental Programs

SJB:

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**Richmond  
Health Services**  
*Part of the Vancouver Coastal Health Authority*

# Memorandum

Attachment 1

**DATE:** November 7, 2002  
**TO:** Suzanne Bycraft  
**FROM:** Kelvin Higo  
Director - Health Protection  
**SUBJECT:** Mosquito Control Program

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Further to our discussion this morning, please find below additional information related to carrying out a comprehensive mosquito control program for the City of Richmond.

Currently, Richmond Health Services is contracted to carry out a mosquito control program on the Sturgeon Banks area of Richmond. This entails surveying the marshland on the outside of the West dyke and then the application of bacillus thuringiensis var. israelensis as needed.

We do not presently carry out a control program targeting adult mosquitoes.

It is proposed that a comprehensive mosquito control program be implemented in the City of Richmond. This would require the identification of the mosquito species currently found in Richmond and identifying the breeding sites of same. We are already cognizant of the fact that Culex pipiens mosquito is present in our City ditches and this is the same species that has been implicated in WNV transmission in the U.S. specifically New York state and Louisiana.

Control measures would be taken as needed. Larviciding of breeding areas to prevent the hatching of mosquitoes would be the preferred method of control. If necessary, adulticiding of mosquitoes may be necessary. This is done through the application of an approved pesticide such as malathion or pyrethrins. Adulticiding of mosquitoes is not the preferred method of control as there are potential impacts to non targeted species eg bees as well as perceived health risks by the public due to exposure to the pesticide during application.

The program would identify all breeding sites for mosquitoes that have the potential to transmit Western Nile Virus. These breeding sites would be monitored on a weekly basis throughout the breeding season and treatment carried out as required.

Furthermore, the contract would entail the obtaining of all necessary permits and approvals and the certification of the mosquito control personnel as required by the Pesticide Control Branch.

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Health staff would also be responsible for the development and distribution of educational material related to mosquito control and the transmission of WNV. Staff will coordinate media releases as necessary and respond to public complaints and concerns.

The City would have to have at our disposal, a truck or trailer mounted ULV fogger for the purpose of adulticiding, if found necessary. Other equipment for the purpose of mass larveciding or adulticiding in areas not accessible by vehicle may also be required.

At the end of the initial mosquito control program year, an analysis and recommendation will be made to the City as to whether a continued program is needed or what other alternative may be suitable.

Our estimate for resources to carry out a comprehensive mosquito control program is attached and includes the work we would continue to do on Sturgeon Banks.

The supervisor will provide supervision and direction to the summer vector control staff; apply for all necessary permits and certificates; respond to telephone inquiries/complaints; and provide liaison with the media and other government agencies.

Our estimate to carry out a comprehensive control program would be **\$112,005** (excluding major equipment identified above eg truck mounted fogger etc.)



April 4, 2003

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ENVIRONMENTAL HEALTH

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**Acute Treatment**  
The Richmond Hospital

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Minor Residence  
Richmond Lions Manor

**Mental Health**  
Child and Youth Services  
Adult/Older Adult Services

**Population Health**  
Environmental Health  
Health Promotion and  
Prevention

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*Part of the Vancouver/Richmond Health Board*

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April 4, 2003

**Attachment 2**

Suzanne Bycraft  
Manager, Emergency and Environmental Programs  
Community Safety  
City of Richmond  
6911 No. 3 Road  
RICHMOND, B.C. V6Y 2C1

Dear Ms. Bycraft:

Re: West Nile Virus

As you are aware, West Nile virus is probably imminent in British Columbia this year. Last year two birds in northeastern Washington State were found to be positive for the virus and with the speed which this virus has spread across North America, health experts feel it is likely that the virus could reach British Columbia this summer.

It is my recommendation as Acting Medical Health Officer for Richmond Health Service Delivery Area (RHSDA) that the City take the necessary precautions to prepare itself for this eventuality. Proper licensing through the Ministry of Environment, Lands and Parks; identification of mosquito species endemic in Richmond; identification and recording of mosquito breeding sites; and the certification and training of personnel are necessary precursors to implementing a comprehensive mosquito control program.

Proper measures taken at this time will position the City's ability to respond in a full and meaningful manner if required to implement their mosquito abatement strategy.

Yours truly,

Anne Vogel, M.D.  
Medical Health Officer

AV:jc

Post-It™ Fax Note	7671E	Date	4/4/03	# of pages	1
To	SUZANNE BYCRAFT				
Co./Dept	CITY OF RICHMOND				
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Fax #	276-2158	Fax #	233-3175		

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