

Staff Report

Origin

Correspondence has been received from Richmond Health Services/Vancouver Coastal Health Authority regarding the Medical Health Officer's expectations concerning West Nile Virus Control activities (Attachment 1) and the 2006 West Nile Virus Program Proposal (Attachment 2).

This report addresses this correspondence and presents the recommended 2006 program for West Nile Virus abatement and mosquito management.

Analysis

Background

The City of Richmond has undertaken pre-emptive mosquito control activities since 2003 to combat the potential spread of West Nile Virus. This program involves mosquito larvicide treatment in ditches and watercourses, as well as along Sturgeon Banks. This is a proactive program designed to reduce West Nile Virus vector mosquito populations, and thereby minimize the risk and potential spread of West Nile Virus.

West Nile Virus has not reached British Columbia as yet. In 2005, West Nile Virus activity was detected in south central Washington State, and there are already new cases confirmed for 2006 in California. This highlights the increasing risk of West Nile Virus spread into British Columbia.

2006 Mosquito Control Program

Richmond is rated a risk level 3 (risk level 4 being highest) by the BC Centre for Disease Control, which means we are at higher risk of West Nile Virus entering our community. As a result, a comprehensive program is recommended for 2006, as outlined in Attachment 2:

- a) **Larval Control** – As in past years, it is recommended that we undertake surveillance and larval control in all City ditches and along Sturgeon Banks. This program would commence May 1, 2006.
- b) **Catch Basins** – Previous studies have shown that Richmond's catch basins harbour West Nile Virus vector mosquitoes. The proposal from Richmond Health Services includes two options for mosquito control in catch basins:
 - i) Pre-emptive control commencing in June, at a cost of \$35,000, or
 - ii) Rapid response control when ordered by the Medical Health Officer at a cost of \$50,000.

In addition to the potential cost savings, Richmond staff are recommending pre-emptive control at the lower cost due to the proximity of the virus in Washington State in 2005, and the fact that the catch basin treatment supplies were pre-purchased in 2005 and will expire in 2007.

Financial Impact

The cost of the 2006 proposed program is as follows:

a)	Larval control – watercourses and Sturgeon Banks -	\$100,000
b)	Pre-emptive catch basin control -	<u>\$ 35,000</u>
	Total	\$135,000

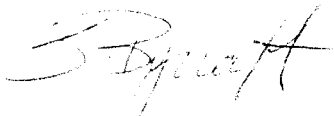
Should Council not wish to proceed with Item b), the program cost could be reduced to \$100,000 (if West Nile Virus does not appear and catch basin control is not ordered by the Medical Health Officer). Similarly, costs could increase to \$150,000 if we do not undertake pre-emptive control and catch basin control is so ordered.

Funds are identified in the 2006 Environmental Programs budget to undertake the program as recommended.

We have typically received provincial funding to support our programs. In 2005, we received total funding of \$177,441.14. We are awaiting a funding announcement from the province for 2006 where a recommendation was forwarded for the same funding levels. It is our understanding at this time that the minimum total provincial funding allocation in 2006 will be one-fifth of 2005 levels.

Conclusion

While the anticipated arrival of West Nile Virus has not transpired to date, it appears closer to our region each year, surfacing in Washington State in 2005. As part of due diligence, staff recommend continuation of our proactive approach in 2006, expanded to include larval control in catch basins. Richmond Health Services is best positioned to undertake this work on behalf of the City.



Suzanne Bycraft
Manager, Emergency & Environmental Programs
(3338)

SJB:

Attachment 1:



Richmond Health Services
Administration

7000 Westminster Highway
Richmond, BC V6X 1A2
Tel: (604) 244-5129 Fax: (604) 244-5191

March 21, 2006

City of Richmond
6911 No. 3 Road
Richmond, BC V6Y 2C1

Attention: Suzanne Bycraft, Manager Emergency & Environmental Programs

Dear Ms. Bycraft:

Re: City of Richmond's 2006 WNV Program

This letter is written to communicate the Medical Health Officer's expectations for West Nile Virus (WNV) control activities in Richmond during the 2006 WNV season. British Columbia was fortunate to be free of WNV in 2005. There is increasing evidence, however, that WNV will arrive in BC this year. The 2005 WNV season ended with WNV activity detected in south central Washington State. The 2006 season has already started, with new cases of WNV confirmed in California last month. Migratory bird flyways along the west coast of North America are now considered the primary means of eventual WNV entry into BC.

The BC Centre for Disease Control (BCCDC) considers Richmond as a *WNV Risk Level 3* area (attachment 1). This assessment was determined based on the following factors:

- Presence of 2 major WNV mosquito vectors (*Culex tarsalis* and *Culex pipiens*) in Richmond;
- Proximity to Washington State; and
- Sufficient summer temperature for moderate to high levels of mosquito reproduction.

BCCDC has also determined that southern BC communities are now in *Response Level Iia* under the BC Arbovirus Surveillance and Response Guidelines. This response level is reached when WNV is, "in a jurisdiction during the previous year, OR in a neighbouring jurisdiction in Canada or the United States in the current year or previous year". *Response Level Iia* recommends the larvicide treatment of known, accessible, and significant breeding sites for *Culex tarsalis* and *Culex pipiens* in populated southern parts of the province that may be at a higher risk for the early introduction of WNV in the current year.

Over the past four years, the City of Richmond has been most proactive in preparing for the arrival of WNV. By continuing its comprehensive program of mosquito surveillance, breeding site mapping, and selective larvicide application, the City will be well positioned, should WNV arrive this year.

Recommendations

Based on the forecasted spread of West Nile Virus and in order to minimize the risk of WNV exposure to the public, it is recommended that the City of Richmond:

1. Continue its pre-emptive larviciding program to surface waters for the control of *Culex tarsalis*, a known mosquito vector of WNV.

Attachment 1:

- 2 -

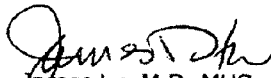
2. Implement a pre-emptive larviciding program in storm sewer catch basins, for the control of *Culex pipiens*, a known mosquito vector of West Nile Virus; or

Be able to implement a catch basin larviciding program within 1 week of being requested by the Medical Health Officer:

- Upon the confirmation that WNV has arrived in the region; or
- At the discretion of the Medical Health Officer when the appearance of WNV is deemed imminent and it would be prudent to minimize the risk of WNV exposure to the public.

Experiences from other jurisdictions suggest that communities which implemented larviciding experienced significantly lower human WNV infection rates, compared to those where no preventive larviciding were undertaken.

Yours truly,

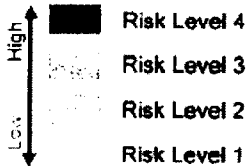

James Lu, M.D. MHSc
Medical Health Officer

Attachment 1:

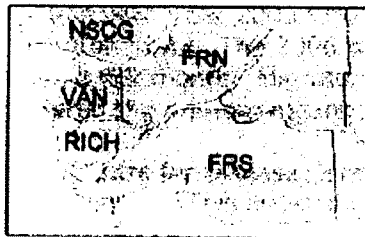
Attachment 1

WNV Risk Levels

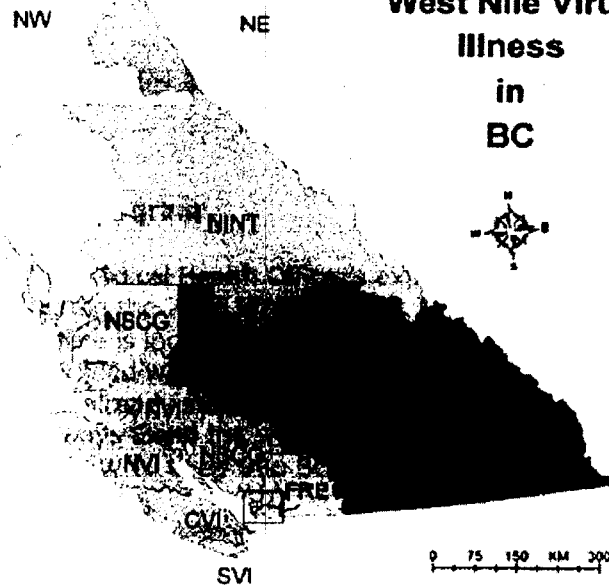
Risk of WNV illness based on the presence of *Culex* mosquitoes, climate and ecosystem type, human population density, and bird migration routes.



Vancouver Lower Mainland Inset



Forecasted Risk for West Nile Virus Illness in BC



Attachment 2:



Richmond Health Department
Public Health Inspection

Richmond Health Services
7000 Westminster Highway
Richmond, BC V6X 1A2
Tel: (604) 233-3147 Fax: (604) 233-3175

March 21, 2006

City of Richmond
5599 Lynas Lane
Richmond, BC V7C 5B2

Attention: Suzanne Bycraft, Manager Emergency & Environmental Programs

Dear Ms. Bycraft:

Re: 2006 West Nile Virus Program Proposal

The 2005 West Nile Virus (WNV) program was a continuation of the comprehensive mosquito management plan developed in 2003 for the City of Richmond. Surveillance activities included the sampling of larval and adult mosquito species, which identified three mosquito species as having high potential for transmitting WNV. *Aedes dorsalis* was abundant on Sturgeon Bank, *Culex tarsalis* was present in City ditches, and *Culex pipiens* in catch basins/inspection chambers.

Results from the catch basin/inspection chamber surveillance highlighted the fact that these man-made structures continue to pose a threat for harbouring *Culex pipiens*. By August, 37% of catch basins and inspection chambers exhibited positive *Culex pipiens*'s activity.

The program is currently "ramping up" in preparation for the pre-emptive larviciding program of Sturgeon Bank and City ditches as part of a risk based approach which is consistent with the recommendations from BCCDC's Arbovirus Surveillance and Response Guidelines for British Columbia. A guideline which outlines the "Use of larvicides to treat known, accessible, significant breeding sites for *Culex pipiens* and *Culex tarsalis* at Level IIa should be considered in populated southern parts of the province that may be at higher risk for early introduction of WNV in the current year." Richmond has been identified as being at higher risk (Risk Level 3), of WNV illness in BC, based on the presence of *Culex* mosquitoes, climate and ecosystem type, human population density, and bird migration routes (Attachment 1. Forecasted Risk for WNV Illness in BC).

Early 2006 WNV confirmation coming out of California State and the presence of WNV in south central Washington State in 2005 highlights the increasing risk of WNV spread. This has prompted health officials to recommend pre-emptive treatment of all mosquito breeding sites supporting *Culex tarsalis* and *Culex pipiens* reproduction.

The following outlines the scheduled activities for 2006 and options which should be considered in preparation for the arrival of WNV in BC.

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Promoting wellness. Ensuring care. Vancouver Coastal Health Authority

Attachment 2:

- 2 -

A. Pre-emptive Larviciding Program Beginning May 1, 2006 (\$100,000 + GST)

These activities have already been engaged through an existing contractual agreement. It is a continuation of last year's program, and includes:

1. Investigation of all private property complaints, recommendations on source reduction, and enforcement of mosquito control provisions under Public Health Protection Bylaw No. 6989.
2. Surveillance and larval control of City ditches.
3. Continued surveillance and testing of adult mosquitoes.
4. Continued surveillance and testing of corvids.
5. Concurrent public education programs and disbursement of educational material, available through Richmond Health Services.
6. The surveillance, sampling, and identification of larvae at a representative sample of catch basins throughout the City.

B. Pre-emptive Catch Basin Control Program Beginning June, 2006 – Option 1 (\$35,000 + GST)

Pre-emptive control measures within City catch basins and inspection chambers.

C. Rapid Response Catch Basin Control Program – Option 2 (\$50,000 + GST)

Implementation of control measures within City catch basins and inspection chambers would be based on the appearance of WNV within British Columbia or in a neighbouring jurisdiction in Canada or the United States in the current year and a high likelihood of human cases. It would be initiated upon direction from Richmond City Council, after the issuance of an Order from the Medical Health Officer.

The catch basin program would utilize the rapid response plan outlined in the WNV Catch Basin Management Study (Attachment 2. CB Rapid Response Plan).

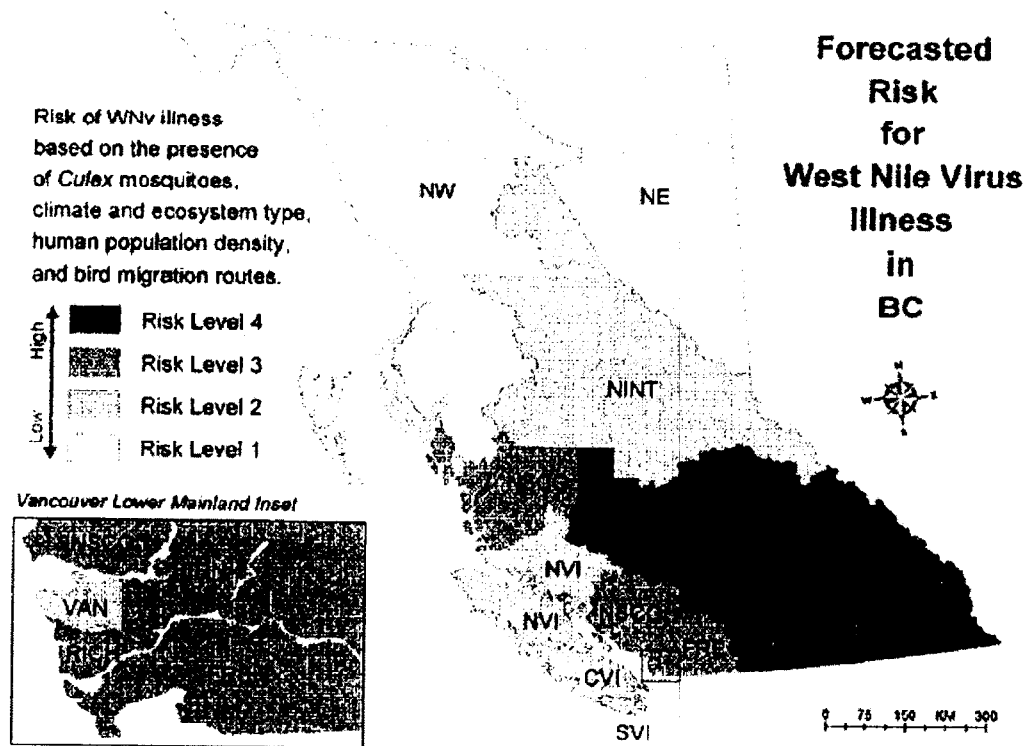
Note:

- City of Richmond would provide suitable storage facility for larvicides (approximately 5 m³).
- Larvicide costs are nil, as larvicides (Altosid) pre-ordered in 2005 using excess Ministry of Health funding.
- Altosid XR briquets have a 24-month guaranteed shelf-life from its manufacturer and are scheduled to expire spring 2007.

Option Date

- Confirmation should be provided by **April 30, 2006** to allow for the procurement of resources required to conduct the specified work under each option.
- If Catch Basin Control Program Option 2 is engaged, it is understood that if WNV does not appear, \$5000 + GST will be forwarded to the Richmond Health Department to cover the cost for training, certifying, and maintaining auxiliary staffing levels.

Attachment 1. Forecasted Risk for WNV Illness in BC



Source: <http://www.civicnct.bc.ca/siteengine/activepage.asp?PageID=223&bhcp=1>

Attachment 2. CB Rapid Response Plan

Catch Basin / Inspection Chamber Mosquito Management Plan Framework

1. Protocol

- Implementation of control measures within catch basins and inspection chambers upon direction from Richmond City Council, after the issuance of an Order from the Medical Health Officer.

2. Operational Parameters

- Program implementation will begin within 1 week of an Order being issued by the Medical Health Officer.
- Completion of treatments will conclude within 4 weeks of implementation.
- Treatment is to include all City catch basins and inspection chambers.

3. Staffing

- Field staff:
 - i. 6 total field inspection staff
 - ii. Training – Mosquito and Biting Fly Certification required
- 1 Supervisor
- 1 GIS data entry clerk

4. Equipment and Materials

- Storage facility for pesticide storage
- 1 extended/crew cab pickup with canopy for use as mobile command and the distribution of larvicides to field staff
- Bags for applicators
- Grate pullers
- Grate markers
- Personal protective equipment
- Stationary
- Signage for transport vehicle and storage facility.

5. Reporting

- Treatment routes based on 'Section-Block-Range' maps
- Staff will report to Supervisor for route assignment
- Completed maps will be submitted for data entry
- It is estimated that applicators will be able to treat 100 inlets/day
- Catch basin and inspection chamber lids will be marked with a dot of paint once treated.

6. Communications

- Media release prior to program implementation
- Phone number for public to report untreated catch basins and inspection chambers on City properties.