City of Burnaby

Meeting 2006 May 15

COUNCIL REPORT

ENVIRONMENT COMMITTEE

C

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

SUBJECT: MOSQUITO CONTROL STRATEGY FOR PUBLIC LANDS (2006)

RECOMMENDATIONS:

1. THAT Council approve the mosquito control strategy for public lands in 2006 as noted in Section 3 of this report.

2. THAT a copy of this report be forwarded to the Medical Health Officer, Fraser Health Region, Suite 400, 4946 Canada Way, Burnaby, B.C. V5G 4H7; and Parks, Recreation & Culture Commission for information.

REPORT

The Environment Committee, at its Open meeting held on 2006 May 09, received and adopted the *attached* report providing updated information regarding mosquito control management activities in Burnaby. For 2006, the Committee proposed a comprehensive education, surveillance and treatment strategy which embraces integrated pest management and adaptive management principles to address the possible occurrence of West Nile Virus in Burnaby.

Respectfully submitted,

Councillor Dan Johnston
Chair

Councillor Pietro Calendino
Vice Chair

Councillor Lee Rankin
Member

:COPY – CITY MANAGER
DIRECTOR PLANNING & BUILDING
DIRECTOR ENGINEERING
DIR. PARKS, REC. & CULTURAL SERV.

City of Burnaby

Meeting 2006 May 09

COMMITTEE REPORT

TO:	CHAIR AND MEMBERS ENVIRONMENT COMMITTEE	**DATE:**	2006 May 04
FROM:	DIRECTOR ENGINEERING	**FILE:**	33000-05

SUBJECT: **MOSQUITO CONTROL STRATEGY FOR PUBLIC LANDS (2006)**

PURPOSE: To provide the Committee with an update on various activities undertaken in 2005 relating to mosquito control in an event of a possible occurrence of West Nile virus in Burnaby and seek approval of the continuance of interim mosquito control strategy for public lands in 2006.

RECOMMENDATION:

1. **THAT** the Committee recommend that Council:

   a) approve the mosquito control strategy for public lands in 2006 as noted in Section 3 of this report: and

   b) forward a copy of this report to the Medical Health Officer, Fraser Health Region, Suite 400, 4946 Canada Way, Burnaby, B.C., V5G 4H7; and Parks, Recreation and Cultural Commission for information.

REPORT

1.0 INTRODUCTION

Over the past three years, the City has undertaken a number of proactive initiatives on public lands as a part of the Council approved interim mosquito control strategy in response to the possible occurrence of West Nile virus (WNv) in Burnaby.

The purpose of this report is to provide the Committee with an update on various activities undertaken in 2005 relating to the noted strategy and to seek continuance of the interim mosquito control strategy for public lands in 2006.

2.0 SUMMARY OF MOSQUITO CONTROL MANAGEMENT ACTIVITIES (2005)

As the Committee will recall, West Nile virus (WNv) is a mosquito-borne virus which is spread between mosquitoes and birds, but humans and birds can get WNv through the bite of an infected mosquito. Birds are reservoir hosts and most documented cases in birds are in the family of *Corvidae* or corvids (Crows, jays, nutcrackers, magpies, ravens). According to the BC Centre for Disease Control (BCCDC), most people who become infected will experience no symptoms at all. About 20% of those will develop mild flu-like symptoms lasting about a 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 of WNV spreading by direct person-to-person contact. There are no human vaccine for WNV at present.

In 2005, endemic WNv activity was noted in central and western Canada including Ontario, Quebec, Manitoba, Saskatchewan and Alberta. In all, 225 human cases were reported. In British Columbia, the WNv season passed without evidence of the disease. However in late August, Yakima County in southern Washington State reported WNv activity in mosquitoes, birds and a horse. This was the first activity in that state since 2002 and presents concerns this coming mosquito season.

Given the possible occurrence of WNv in the Lower Mainland, staff had undertaken the following actions in 2005:

a) Education and Awareness

As in previous years, education material regarding WNv was distributed to at all Civic facilities and posted on the City Web site (see Attachment #1). In addition, presentations were made to Engineering and Parks operations staff as well.

b) Surveillance of Dead Crows, Adult Mosquito Trapping and Reporting

In 2005, callers were asked to contact the Fraser Health Authority West Nile Virus Information Line (1-888-968-5463) regarding dead crow sightings and collection. Analysis of the dead crows was undertaken at B.C. Animal Health Center located in Abbotsford.

According to the BCCDC website, a total of 1058 corvids were collected across the province and tested in 2005. Of these 77 were from Burnaby. There was no WNv detected in the tested samples. The average turn around time from collection, testing to reporting was one week.

There were 189 registered adult mosquito trap locations across the province. Of these, six were located in Burnaby (2600 Blk. Eastbrook Parkway - 1, Robert Burnaby Park – 2, 5200 Blk. Glencarin Drive - 2, and Douglas at Lougheed - 1). Adult mosquito samples were obtained once a week and submitted to the BCCDC laboratory for genus identification during the monitoring period (May to end of October). In addition, a representative number of mosquito carcasses were sent for WNV testing. There was no WNv detected in the tested samples.

Complete results on corvid testing and identification and distribution of adult mosquitoes are available through BCCDC web site (www.bccdc.org).

c) Surveillance and Mapping of Mosquitoes Breeding Sites on Public Lands

In 2005, the City retained Morrow BioScience Limited to undertake surveillance of surface waters and catch basins in Burnaby.

As a part of the initial surveillance of potential surface water mosquito breeding sites, all of the previously identified sites in 2004 were re-visited. A total of 289 sites were subsequently selected for continued monitoring. Where appropriate, larval samples were collected and identified (see Attachment #2). The most common species found were *Culex pipiens (*primarily feeds on birds but will also feed on reptiles and mammals and only become nuisance to humans in late summer and fall) *Culex tarsalis* (virus vector that bites both birds and humans) and *Culex territans (*predominantly an amphibian biter and not considered to be a *WNV* vector).

Bi-monthly surveys of mosquito larvae were also conducted at 302 catch basins located on public roads and parking lots within parks (see Attachment #3). A majority of the catch basins sampled were found to harbour mosquito larvae between late June and mid August. The peak larval numbers were noted in early August. By late August, the numbers of catch basins containing larvae fell and by mid-September, mosquitoes were not detected in any catch basins. By far, the most abundant species detected was *Culex pipiens*.

In addition, ten adult mosquito traps were placed at various locations in Burnaby. The locations complimented the sites selected by the Fraser Health Authorities as a part of their broader adult mosquito trapping program.

d) Pre-emptive Larval Treatment of Limited Surface Water and Catch Basin Sites

Surveillance of the potential surface water mosquito breeding sites in the earlier phase of the work identified areas with above average abundance of WNV vector mosquito species. As such, the consultant recommended applying pre-emptive larval treatments to a total of approximately 3.5 hectares of surface water sites. In following with the Council approved Interim Mosquito Control Management Strategy (2005), staff evaluated the consultants recommendation and approved pre-emptive spot larval treatment (by hand) using granular Bti (Bacillus thuringiensis israelensis). Similarly, catch basins within three of the fourty-five road maintenance areas had elevated numbers of WNv vector mosquito larvae requiring treatment using Bsp (Bacillus sphericus).

All of the treatments were undertaken utilizing the Provincial Pesticide Permit for WNv. Appropriate public notification was provided in the local papers and appropriate senior agencies were notified about treatment locations, amounts and type.

3.0 MOSQUITO CONTROL MANAGEMENT STRATEGY FOR PUBLIC LANDS - 2006

In reviewing the previous year's work and upon giving due consideration to the attached correspondence from the Medical Health Officer to the City regarding West Nile Virus recommendations (see Attachment #4), staff propose the following mosquito control strategy for public lands within Burnaby for 2006.

PHASE	ACTIVITY	COMMENTS
Prevention	Public Education	Continue to provide information to the public regarding West Nile Virus as undertaken in 2005; Collaborate with the Fraser Health Authority in the delivery of the public message where appropriate.
	Staff Education	Continue distribution of information on West Nile Virus to staff. Undertake staff presentations as required.

PHASE	ACTIVITY	COMMENTS
Surveillance	Identification and Mapping of West Nile virus vector mosquito breeding sites	Continue surveillance of WNv vector mosquito breeding sites in select surface waters located on public lands; Undertake surveillance of WNv vector mosquito breeding sites in select catch basins located on public roads and within parks; Continue placement of adult mosquito traps which complements with Fraser Health adult mosquito trap locations; Continue mapping of the WNv vector mosquito breeding sites and related information.
	Bird (crow) collection and testing	Continuance by Fraser Health Authority as a lead. Results of dead crow analysis to be available through BCCDC web site (www.bccdc.org).
	Adult mosquito collection, identification	Continuance by Fraser Health Authority as lead. Samples submitted to the laboratory for genus identification and WNv testing by Fraser Health Authority. Results of analysis to be available through BCCDC web site (www.bccdc.org).
Treatment	Pre-emptive Larvicide Treatment of Surface Waters and Catch Basins	Undertake limited spot application of Bti and or Bsp where necessary only and as a part of IMMP; Undertake discussion with Fraser Health Authority regarding WNv vector treatment thresholds in catch basins before initiating pre-emptive treatment.
	Broader Larvicide Treatment - Ditches / Ponds / Swales / Catch Basins on Public Lands	Undertake broader larvicide treatment only when ordered by the Medical Health Officer, Fraser Health Officer based on the evaluation of indicators - human cases, positive results in birds and or mosquitoes;
	Adult Mosquito Treatment	Participate in the Adult Mosquito Control Local Advisory Committee established by the Fraser Health Authority. If adult mosquito treatment is to be required by the Fraser Health Authority for human health purposes, it is to be undertaken after due consultation with the City by the Fraser Health Authority.

PHASE	ACTIVITY	COMMENTS
Communication	Communication to Council and public in an event of WNv presence in the community and undertaking of broader treatment measures.	Continue to update the Local Government WNv Communication Strategy which seamlessly ties with the BC Centre for Disease Control (BCCDC) Communication Strategy.
Evaualtion	Monitor and evaluate the effectiveness of measures taken.	Prepare a report in fall of 2006 identifying actions undertaken and recommendations for 2007. Provide a copy of the report to the Fraser Heath Authority for their information.

On April 11, 2006, UBCM announced that under an agreement with the Ministry of Health, UBCM will be administering a program to ensure a proactive approach to mosquito control with the intent of reducing the risk of occurrence of WNv. A total of $4 million is being made available from the Ministry of Health to local governments for this purpose.

This funding is to provide financial assistance to local governments for mosquito control, including mapping, source reduction, larviciding and contingency planning for emergency adulticiding, but not emergency application of adulticides. Should this become necessary, a contingency fund at the Ministry of Health Services has been identified for emergency adulticide application that will fully reimburse these costs.

Based on community risk level criteria, each local government is eligible for a base level funding plus per capita funding. The funding available to Burnaby is $170,545. Staff are in a process of applying for the funding through UBCM to assist in the implementation of the above proposed work.

3.0 CONCLUSION

A number of initiatives have been undertaken by the City to effectively respond to the potential threat of West Nile Virus. For 2006, building upon these initiatives staff are proposing a comprehensive education, surveillance and treatment strategy which embraces integrated pest management and adaptive management principles to address the possible occurrence of West Nile virus in Burnaby. Staff are in a process of applying for a recent grant through the UBCM to assist in the implementation of the proposed work.

W.C. Sinclair, P. Eng.
DIRECTOR ENGINEERING

DD:
Attachment

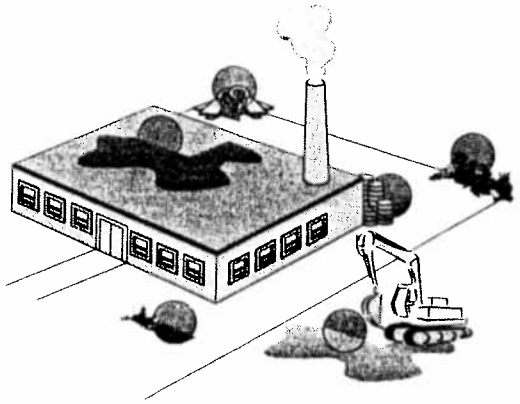
Copied to: City Manager
Director Parks, Recreation and Cultural Services
Director Finance

What You Can Do at Work

Reduce Mosquito Breeding in Commercial/Industrial Areas & Development Sites

Commercial and industrial property owners, as well as owners of sites under development also have a role to play in monitoring exterior areas for pooling water. Once these mosquito breeding areas are found, the following actions can be taken:

- Fill-in or level any depressions in the landscape resulting from tire ruts or excavation.
- Store or cover abandoned equipment, tires, storage drums or refuse areas.
- Remove water that collects in tarps, flat roofs, awnings or other surfaces.
- Clear decaying grass, leaves or other organic matter from drains, gutters or refuse areas.
- Pump-out accumulated sludge in catch basins or trench drains on private property.
- Install fountains or aerators in bio-ponds, reflecting pools or other artificial water bodies.



For additional control measures on private lands please contact the Fraser Health Authority. All actions taken must be in compliance with Federal and Provincial regulations.

More Information

Fraser Health Authority - For Health Impacts, Dead Crow (Corvid) Reporting
Toll-free: 1-888-WNV-LINE (1-888-968-5463)
www.fraserhealth.ca.

BC Centre of Disease Control - For Health Impacts, Dead Corvid and Adult Mosquito Monitoring
www.bccdc.org

BC Nurseline - For West Nile Virus Symptoms
Toll-free: 1-866-215-4700
TTY: 1-866-TTY-4700

City of Burnaby, Engineering Department - For Other Inquiries
604-294-7460
engineering@city.burnaby.bc.ca.

Information on the City of Burnaby

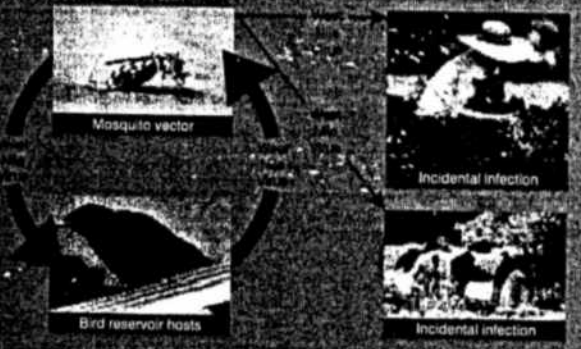
West Nile Virus

Spring/Summer 2005

Background to the Virus

West Nile Virus (WNV) is a mosquito-borne illness that began spreading westward across North America in 1999. It has since spread to all continental US states, including California and Oregon in 2004, and seven Canadian provinces including Alberta.

Members of the corvid family (e.g. crows, ravens, jays) are hosts to the WNV. Mosquitoes become infected when they feed on the blood of a bird that carries the virus. Infected mosquitoes become capable of spreading the virus to animals and people by biting them.

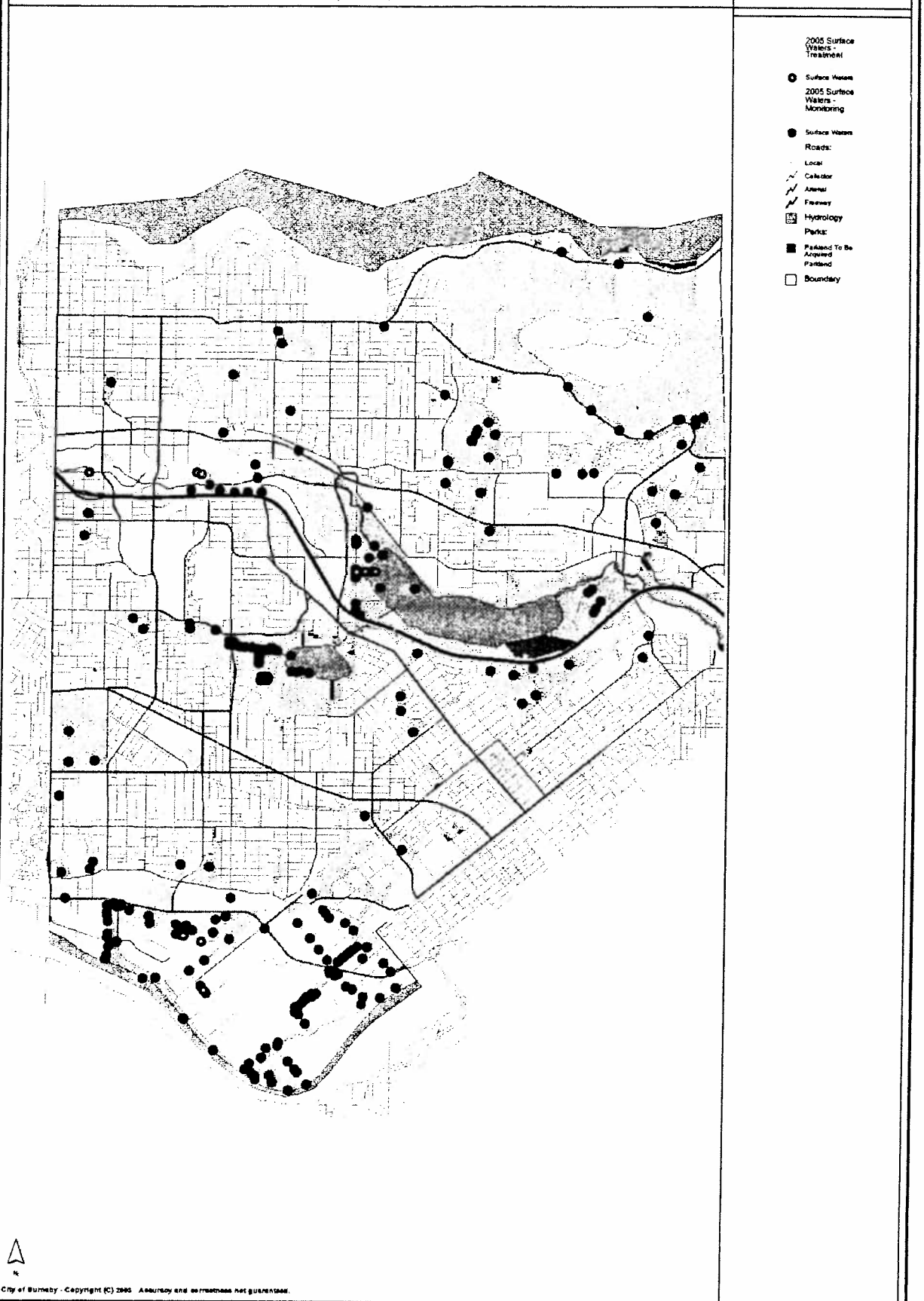


Read more to find out ways of protecting yourself and others from West Nile Virus.

Surface Waters Monitored/Treated for WNv Mosquitoes (2005)

September 13, 2005

City of Burnaby



This information has been gathered and assembled on the City of Burnaby's computer systems. Data provided herein is derived from a number of sources with varying levels of accuracy. The City of Burnaby disclaims all responsibility for the accuracy or completeness of information contained herein.

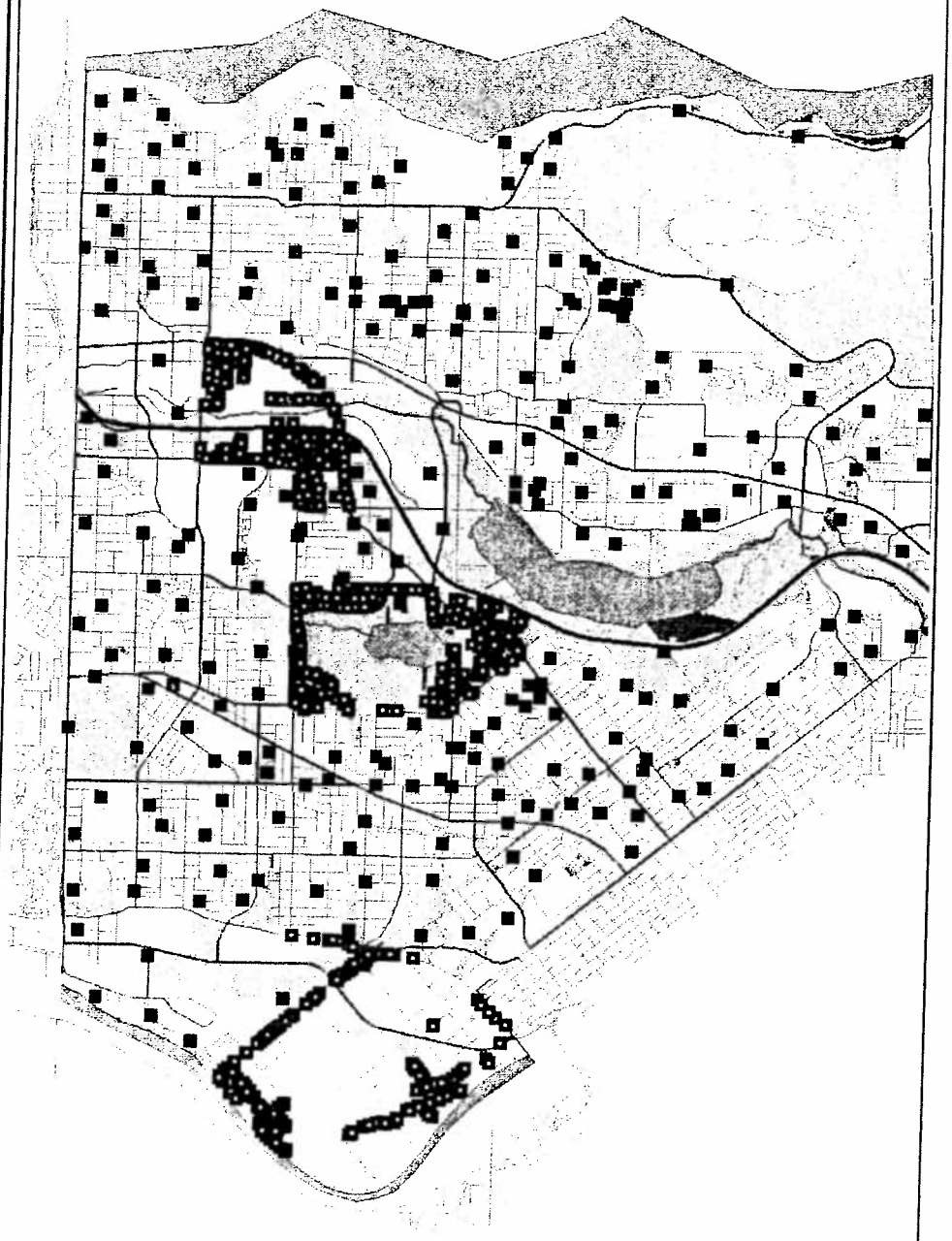
Map Scale
1 : 50000

ATTACHMENT 2

Catch Basins Monitored/Treated for WNv Mosquitoes (2005)

September 13, 2005

City of Burnaby



2005 Underground Structures - Treatment

Underground Structures

2005 Underground Structures - Monitoring

Underground Structures

Roads:

Local

Collector

Arterial

Freeway

Hydrology

Parks:

Parkland To Be Acquired

Parkland

Boundary

N

This information has been gathered and assembled on the City of Burnaby's computer systems. Data provided herein is derived from a number of sources with varying levels of accuracy. The City of Burnaby disclaims all responsibility for the accuracy or completeness of information contained herein.

Map Scale
1 : 50000

ATTACHMENT 3

ATTACHMENT #4

fraserhealth Better health. Best in health care.

February 28, 2006

Mr. Robert Moncur
City Manager
City of Burnaby
4949 Canada Way
Burnaby BC V5G 1M2

Dear Mr. Bob Moncur:

Re: West Nile Virus (WNV) – Update and Recommendations for 2006

This letter contains important information about:

1. **WNV and Local Government WNV Response Plans.**
2. **Recommendation to initiate strategic pre-emptive larval control to <u>all priority</u> breeding sites.**
3. **Health Authority and Local Government roles with respect to monitoring adult WNV-vector mosquito populations AND preparedness for adult mosquito control.**
4. **WNV funding announcement and allocation protocol for 2006.**

The 2005 West Nile Virus season came and went without evidence of the disease in Fraser Health or anywhere in British Columbia. Indeed, WNV activity throughout much of North America was considered average or about what would be expected in a typical year. In late August, however, Yakima County in southern Washington State reported WNV activity in mosquitoes, birds and a horse, the first of such activity in that state since 2002. **This presents concerns for our province this coming mosquito season.**

As Medical Health Officers in Fraser Health, we again request Local Government participation in monitoring, surveillance and mosquito-control activities. This work, especially early-season mosquito larval control, is considered the best practice to delay the appearance of WNV, reduce the likelihood of outbreaks and minimize the effects on human populations when it does arrive.

1. Local Government WNV Response Plans

In order to meet provincial and regional expectations with regard to WNV preparedness, we are requesting a copy of your 2006 WNV Response Plan by April 30th, 2006 and, if you have not already provided it, a summary of 2005 activities.

Similar to last year, the 2006 Response Plans should include:

a. staff and Council education regarding WNV;
b. public education regarding ways to reduce mosquito breeding (manage standing water) and recommended ways to protect against mosquito bites (may be done jointly with Fraser Health);
c. identification and mapping of mosquito-producing areas/breeding sites;

Medical Health Officer
Fraser Health
#400 - 4946 Canada Way
Burnaby BC V5G 4H7
Canada
Tel: (604) 918-7444
Fax: (604) 918-7632
www.fraserhealth.ca

d. source reduction of mosquito breeding and nesting sites;
e. mosquito larvae speciation and identification of areas with species that are potential WNV vectors (particularly *Culex tarsalis* and *Culex pipiens*);
f. preparedness for control of mosquito larvae, including preparedness for use of larvicidal agents (in accordance with the province-wide permit);
g. appointment or confirmation of members for the WNV Adult Mosquito Control Local Advisory Committee - established to advise the Medical Health Officer in a situation where increased mosquito control may be indicated for the purpose of preventing human disease;
h. a public communication strategy for your WNV Response Plan;
i. a public communication strategy to be implemented in association with Fraser Health if adult mosquito control measures are determined to be necessary to protect human health;
j. a process for the rapid identification of areas that would be considered sensitive if adult mosquito control activities are deemed to be necessary (e.g., bee keepers, organic farming operations, sensitive habitats); and
k. a process for monitoring and evaluation of your WNV Response Plan.

We are also requesting a *Summary Surveillance and Control Report,* to be prepared at the end of the 2006 mosquito season and submitted by December 1st, 2006. This is needed to better understand the program development in each community. This report should include the following:

a. the number of individual catch basins surveyed for monitoring purposes and how often they were monitored;
b. the number of catch basins treated, with what pesticide, how much pesticide and how often they were treated;
c. the number of surface water sites monitored and how often they were monitored;
d. the number and total area (Ha^2) of surface water sites treated, with what pesticide, how much pesticide, and how often each site was treated;
e. the date treatment started and ended for the catch basin and surface water sites;
f. the costs relating to each of the above activities; and
g. an estimate of the sensitive habitat mapped in your jurisdiction.

2. Recommendation to initiate strategic pre-emptive larval control for vector mosquito breeding sites

The Medical Health Officers in Fraser Health continue to advocate for effective, responsible source reduction and strategic, pre-emptive larval control early in the mosquito season as the strategy of choice to keep adult mosquito populations in check later in the season. As such we recommend the following:

- Initiate pre-emptive larval control to all identified surface water WNV vector mosquito breeding habitat. Larval control should begin between June 1st and June 15th unless seasonal (climatic) or other evidence demonstrates an alternate date range or allows more selective methodology/prioritization; and
- Initiate pre-emptive larval control to catch basins. This should begin between June 15th and June 30th, unless seasonal (climatic) or other evidence demonstrates an alternate date range or allows more selective methodology/prioritization.

This letter serves as a recommendation to utilize the Provincial Pesticide Permit for WNV purposes (776-001-2003/2005) to initiate the above-noted activities. Note: The existing Pesticide Use Permit for WNV has been extended to December 31, 2006.

If you are not planning to implement pre-emptive mosquito control as outlined above, please indicate your program intentions and rationale prior June 1st, 2006.

3. Health Authority and Local Government roles with respect to monitoring adult WNV-vector mosquito populations AND preparedness for adult mosquito control

In late August 2005 the Ministry of Health Services provided the Regional Health Authorities funds to advance regional adult mosquito control preparedness. Fraser and Vancouver Coastal Health, in partnership, hired a mosquito control contractor on retainer for the balance of the 2005 season. The two Health Authorities also purchased two state-of-the-art Grizzly 1800 E truck-mounted sprayer units for strategic adult mosquito control in the Lower Mainland. These units are ready for use if and when an adult mosquito control spray event is required.

For 2006, Fraser and Vancouver Coastal Health will continue administer a contract or contracts to implement spray events if required. This can only be achieved through coordinated preparedness with our local, regional and provincial partners. We will continue to advocate for the further development of these partnerships.

Adult Mosquito Control Local Advisory Committees (LAC) have been established for consultation if a situation warrants consideration of adult mosquito control for human health purposes. Given the recent municipal elections, please review and update your elected and non-elected representatives for the LAC including their contact information. You may also find it useful to include your local Emergency Response Coordinator as part of this committee.

4. WNV funding announcement and allocation protocol for 2006

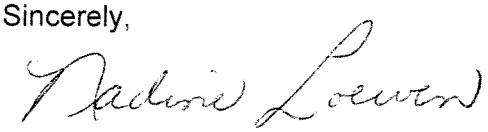
Funding commitments from the Ministry of Health Services should be announced by the end of March. This will allow further WNV education, source reduction and larval control including catch basin and surface water management to continue throughout the upcoming season. It is again expected that provincial funding will be accessed by direct application to the Union of BC Municipalities (UBCM).

We would like to express appreciation to you and your staff for your partnership in the development of a cooperative, region-wide approach to West Nile Virus preparedness. If you would like to discuss any of the issues in this letter, please call Randy Heilbron, Fraser Health WNV Coordinator at (604) 572-2658.

Please send all correspondence to:

Randy Heilbron, West Nile Coordinator
Fraser Health
14265 56th Avenue
Surrey BC V3X 3A4
randy.heilbron@fraserhealth.ca

Sincerely,



Nadine Loewen, MD, BSc, MEd, MHSc
Medical Health Officer

Enclosures: see list on page two

c: Mr. Dipak Dattani, Environmental Services, City of Burnaby