

TORONTO STAFF REPORT

March 13, 2003

To: Works Committee

From: Barry H. Gutteridge, Commissioner, Works and Emergency Services

Subject: Protocol for the Control of Mosquito Larvae to Prevent and Control West Nile Virus
All Wards

Purpose:

The purpose of this report is to respond to the recommendations of the Board of Health to the Commissioner of Works and Emergency Services regarding the above.

Financial Implications and Impact Statement:

There are no financial implications from the adoption of this report.

Recommendations:

It is recommended that this report be received for information.

Background:

The Board of Health, at its meeting on January 27, 2003, had before it a report (January 20, 2003) from the Medical Officer of Health, recommending a protocol for the control of mosquito larvae to prevent and control the spread of West Nile Virus (WNV). The Board referred the report to the Commissioner of Works and Emergency Services for comment and made a number of further requests and recommendations respecting: funding in 2003; public education and communication; research and development of non-chemical control alternatives; and further consultation with other agencies.

Subsequently, City Council, at its special meeting for Final 2003 Budget Approval held on February 24, 2003, amended and adopted the CAO's report "Funding for the West Nile Virus Program" dated February 24, 2003 and in doing so addressed many of the recommendations of the Board of Health and made others moot.

This report lists each of the 13 recommendations made by the Board of Health at its meeting on January 27, 2003, but only addresses those affecting Works and Emergency Services.

Comments:

- (1) [The Board of Health] refers the report (January 20, 2003) from the Medical Officer of Health to the Commissioner of Works and Emergency Services for comment;

The Medical Officer of Health did forward a draft version of the protocol to Works and Emergency Services for comment prior to submitting the report to the Board of Health. We support the phased approach to decision making that the protocol is based on. However, we have concerns with the proposal to apply a chemical pesticide directly into catch basins throughout the City during the summer of 2003.

Council recently approved the Wet Weather Flow Management Master Plan, which addresses objectives of improving water quality and achieving healthy aquatic communities in area watercourses and the waterfront. The Plan advocates the implementation of source control measures such as reductions in pesticide use to help achieve these objectives. Notwithstanding the human health issues and the need to control the West Nile Virus, the application of pesticides by the City, in the City's estimated 175,000 catch basins, is in direct contradiction with the Plan and may therefore challenge the City's credibility. Furthermore, most of these catch basins are directly connected, via sewer pipes, to the nearest stream or creek and consequently soluble substances placed in these catch basins will be flushed directly to local watercourses during a rainfall event. While we recognize that methoprene, the recommended larvicide, has been chosen because it is effective in controlling the species of mosquitoes found to be transmitters of the West Nile Virus, we are also concerned that this pesticide may have adverse impacts on other insects and aquatic organisms within area watercourses and natural wetland systems. Natural predators of mosquitoes and mosquito larvae may also be at risk, which could therefore increase our dependence on pesticide use in the future.

The environmental impact on area watercourses may be exacerbated should other municipalities, within watersheds which extend beyond the City limits, also opt for this control measure.

It should also be noted that in addition to roadside catch basins there are many other sources of standing water, which provide additional habitat for this type of mosquito, including private properties across the City including parking lot catch basins, eavestroughs, awnings, tarps, pavement depressions, empty containers, chemical drums, etc. These additional sites would continue to be problematic as they are unaffected by the proposed larviciding.

The introduction of a pesticide in roadside catch basins, later released untreated to the aquatic environment through City sewer outfalls during rainfall events, may place the City in violation of the Federal Fisheries Act, Ontario Environmental Protection Act and Ontario Water Resources Act.

In order to address these concerns, City Council, while considering the CAO's report on Funding for the West Nile Virus Program, adopted among others, the following recommendations:

- “(5) *that Works and Emergency Services, in partnership with Toronto Public Health explore a collaboration with other interested municipalities in Ontario, affected by the spread of the West Nile Virus, to undertake a series of pilot tests to assess the effectiveness of various non-chemical alternatives for the control of mosquitoes transmitting the West Nile Virus;*
- (6) *that Works and Emergency Services, in collaboration with the Toronto and Region Conservation Authority, undertake an environmental impact assessment at a representative subwatershed area, wholly contained within the City of Toronto, associated with the application of methoprene in roadside catch basins to consist of:*
- (a) water quality analysis of stormwater runoff from sewer outfalls and within the watercourse post larviciding to assess the concentrations of methoprene discharged to the aquatic environment;*
- (b) toxicity testing, pre and post larviciding, of stormwater runoff to assess whether concentrations of methoprene in this type of discharge are toxic to representative target organisms; and*
- (c) an instream aquatic community assessment pre and post larviciding; “*

City Council also amended the clause by adding thereto the following:

“It is further recommended that City Council request the Ontario Ministry of the Environment, in collaboration with the Ontario Ministry of Natural Resources, Environment Canada, the Federal Department of Fisheries and Oceans and the Toronto and Region Conservation Authority to undertake a comprehensive system-wide environmental impact study for the six watersheds which extend across the City of Toronto.”

Public Education Programs

- (2) [The Board of Health] requests the Commissioner of Works and Emergency Services to report to the next meeting of the Works Committee on how Works and Emergency Services can assist Toronto Public Health in creating a public education program to address areas on private property where mosquitoes breed and how the public can deal with them;
- (3) [The Board of Health] requests the Commissioner of Works and Emergency Services to review the existing communication vehicles to determine how they can be revised to assist Toronto Public Health goals for reducing the spread of West Nile Virus;
- (5) [The Board of Health] recommends to Budget Advisory Committee and Council that the resources provided for the prevention and control of West Nile Virus public education programs be strengthened;

City Council, while considering the CAO's report on Funding for the West Nile Virus Program, adopted among others, the following amended recommendation:

“(1) that Council approve the 2003 West Nile Virus Program with funding of \$1,376,000.00 gross / \$685,000.00 net within the Public Health Operating Budget with funds to be transferred from the Corporate Non-program budget”

and the further recommendation that:

“the Medical Officer of Health be requested to work with staff of Works and Emergency Services, Economic Development, Culture and Tourism (Parks and Recreation) and the Toronto and Region Conservation Authority in developing educational messages on West Nile Virus to be publicized in the current publications and programs of those Departments and Agency.”

As recommended by the Budget Advisory Committee of City Council, Toronto Public Health's West Nile Virus program was reduced by \$100,000 (net). This reduction will have a major impact on the ability of Toronto Public Health to conduct a WNV public education campaign.

There was extensive media coverage of WNV last year and that will undoubtedly continue at no cost to the City. It is hoped that continued media interest will allow TPH staff to deliver key messages to the public about mosquito source reduction and personal protective measures against mosquito bites. TPH will continue to disseminate important information on WNV through its existing communications vehicles, such as the WNV information line and web site. TPH is also in the process of establishing communication partnerships with other City departments and institutions (such as Works and Emergency Services, Parks and Recreation, the various school boards, etc) to distribute information on WNV.

Works and Emergency Services can assist TPH by ensuring, in its public education on such topics as storm water management and downspout disconnection, that its messages take into account and support the messages regarding WNV. There is also a number of existing communication vehicles to which information on WNV can be added. These include publications such as Water & Wastewater Services Division's *Water Watch* (distributed to homeowners twice a year) and the *Toronto Environmental Guide* (a booklet supported by Works and Emergency Services that is distributed via *Toronto Life* magazine). In terms of other City resources, there are also the Councillors' newsletters. All of these communications vehicles are printed in English only. TPH and Works and Emergency Services can also place information on their respective web sites and make information available at special events, libraries, recreation centres, civic centres, etc.

While the City can deliver a limited public education campaign with these strategies, there will be no new advertising materials developed by TPH for 2003; TPH has not received funds to advertise on the TTC or OMG garbage bins; there will be no newspaper advertisements, and no contingency funding for reaching non-English-speaking audiences. However, because of a provincial statutory requirement to notify the public of where and when larviciding will take place, TPH has kept approximately \$70,000 in the budget for notices to the public.

The ideal scenario would be for the City to be augmenting a widespread provincial campaign. To gain maximum reach and exposure on this issue, the province should fund and co-ordinate a major television ad campaign similar to that undertaken for the flu shot, or send information to all residents door-to-door.

Inter-Departmental and Inter-Agency Consultation

- (4) [The Board of Health] requests that the Medical Officer of Health, the Chair of the Board of Health, the Water Advocate, the Chair of the Works Committee, the Commissioner of Works and Emergency Services, and the General Manager, Water and Wastewater Services, Works and Emergency Services, meet to review the recommendations and suggest further improvements to the proposed Integrated Pest Management protocol and report thereon to the Works Committee and the Board of Health;
- (11) [The Board of Health] recommends that the Toronto and Region Conservation Authority and the Waterfront Regeneration Trust be consulted for their input on watershed issues with respect to the aforementioned report from the Medical Officer of Health;

The meeting referred to above has not taken place however, the CAO in preparing her report to City Council on Funding for the West Nile Virus Program consulted with officials from Toronto Public Health, Water and Wastewater Services, the Federal Department of Fisheries and Oceans, the Toronto Environmental Alliance, the Toronto and Region Conservation Authority, the Ontario Ministry of the Environment as well as the Chair of the Board of Health.

Funding for the West Nile Virus Program in 2003

- (6) [The Board of Health] advises Budget Advisory Committee that \$1.5 million gross is required to combat West Nile Virus in 2003;
- (7) [The Board of Health] recommends that the approval of funds in the amount of \$750,000.00 net to be allocated to the prevention and control of West Nile Virus be deferred until the 2003 Budget wrap-up meeting to ensure provincial funding and that a concerted GTA-wide approach is taken to combat West Nile Virus;

As mentioned above, City Council, while considering the CAO's report on Funding for the West Nile Virus Program, adopted among others, the following amended recommendation:

“(1) that Council approve the 2003 West Nile Virus Program with funding of \$1,376,000.00 gross / \$685,000.00 net within the Public Health Operating Budget with funds to be transferred from the Corporate Non-program budget”

and

“(2) the Chief Administrative Officer, the Mayor and the Medical Officer of Health continue to make strong representations to the provincial government in collaboration with other municipalities, the Association of Municipalities of Ontario (AMO) and the Association of Local

Public Health Agencies (ALPHA) that the West Nile Virus Program be 100 percent provincially funded;”

Development of Non-chemical Control Alternatives

- (8) [The Board of Health] recommends that Toronto Public Health seek resources from the City and the Province to fund research and pilot programs into alternative non-chemical control mechanisms for the prevention and control of West Nile virus and report back to the Board of Health on progress;
- (9) [The Board of Health] recommends that Toronto Public Health, together with Works and Emergency Services, pilot a mechanical/biological control plan;
- (12) [The Board of Health] recommends that every effort be made to explore all possible strategies as outlined in Tier 1 and Tier 2 of the proposed Integrated Pest Management protocol before Tier 3 is enacted;
- (13) [The Board of Health] recommends that the Tier 1 control strategy in the proposed Integrated Pest Management protocol be expanded to include continued research and piloting of non-chemical control mechanisms for West Nile Virus.

Recommendations (8), (9), (12) and (13) are related to the need for the development of practical non-chemical control options for mosquitoes and address the general concerns that Works and Emergency Services has with the Program.

To develop practical, effective options, we need to know more about:

- the location and types of mosquito breeding sites and whether they can be eliminated or altered without causing other environmental harm;
- methods to disrupt or destroy the mosquito to prevent it becoming an adult;
- the threshold population of mosquitoes that we can tolerate and the feasibility of controlling to that level; and
- practical control options for use at industrial, commercial, institutional and residential properties and whether they can be made mandatory and enforced.

These issues are common to all municipalities in North America that have become infested with West Nile Virus in the last few years. In some cases the answers may vary with climate, topography and built environment, but certainly within the Greater Toronto Area, it would be wise to have a co-ordinated approach to research in these areas.

As required by the recommendations in the CAO's report adopted by Council, Works and Emergency Services staff will establish a West Nile Virus Advisory Committee comprised of staff from Toronto Public Health, Works and Emergency Services, Parks and Recreation, the

Toronto Environmental Alliance and the Toronto and Region Conservation Authority with a particular focus on the environmental issues associated with the West Nile Virus Program.

- (10) [The Board of Health] recommends that Council be informed prior to the implementation of the proposed Tier 3 control measures, outlined in the aforementioned report, by Toronto Public Health staff;

No comment by Works and Emergency Services required.

Contact:

Ted Bowering, P.Eng.
Manager, Soil / Water Quality
Environmental Services
Tel: 338-5473
Fax: 392-1456
E-mail: tbowerin@toronto.ca

William G. Crowther, P.Eng.
Executive Director, Technical Services

Barry H. Gutteridge
Commissioner, Works and Emergency Services