APPENDIX VII

ONTARIO REGULATION 199/03

made under the

HEALTH PROTECTION AND PROMOTION ACT

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CONTROL OF WEST NILE VIRUS

Determination if action required

1. A medical officer of health shall make a determination, based upon a local risk assessment in accordance with the document published by the Ministry of Health and Long-Term Care entitled *West Nile Virus Preparedness and Prevention Plan for Ontario*, whether action is required by a municipality to decrease the risk of West Nile Virus to persons either inside or outside the health unit served by the medical officer of health.

Notice to municipality

2. (1) Where the medical officer of health has determined that action is required, he or she may give notice to the municipality of the required action.

(2) In determining required actions under subsection (1), the medical officer of health shall have regard to,

(a) the document mentioned in section 1; and

(b) the generally accepted practices in the field of public health with regard to decreasing the risk of West Nile virus to persons.

Must comply

3. A municipality shall comply with any requirements set out in the notice.

What may be required

4. Action required under this Regulation may include, without being limited to,

(a) requirements respecting source reduction measures;

(b) requirements respecting surveillance;

(c) requirements respecting public awareness campaigns about personal protection;

(d) requirements respecting the control measures for larviciding and adulticiding set out in Table 1; and

(e) requirements respecting the time within which the action shall be taken.

TABLE 1

LARVICIDING AND ADULTICIDING IN ONTARIO

WEST NILE VIRUS RESPONSE

"Triggers" based on surveillance of WNv positive humans, birds, mosquito pools or mammals (horses)

Current-Year WNv findings in Health Unit or municipality	Last Year's WNv findings in Health Unit or municipality	Preparatory Status (Larval surveys, mosquito trapping, mapping, training, etc.)	Larviciding ACTION	Adulticiding ACTION
No West Nile virus found yet	No West Nile virus found; virus found in adjacent Health Unit(s)	Not yet done	Do the preparatory work, then larvicide where indicated	Not indicated
No virus found yet	Virus found	Not yet done	Do the preparatory work,	Not indicated

			then larvicide where indicated	
No virus found yet	Virus found	Done last year and under way this year	Larvicide where indicated	Not indicated
Virus found in non-human (dead bird, mosquito pool or mammal) – isolated or as a "hot spot"	Virus found or not found	Done or under way this year	If a "hot spot" and larvae are present, larvicide around this "hot spot" (if not too late in the season)	Adulticide a 3-km "Zone" ONLY IF there are high-risk indicators of transmission to humans*
Human case(s) - one or a few in a space-time "cluster"	Virus found or not found	Done or under way this year	Larvicide around the case or cluster if larvae are present (and if not too late in season)	Adulticide a 3-km radius Zone around the case or cluster
Human cases continue to occur; continued high-risk indicators*	Virus found or not found	Done or under way this year	Larvicide widely where larvae are found (if not too late in season)	Adulticide 3-km Zones – may be contiguous or overlapping

Note: Public education efforts and non-pesticide means of mosquito source reduction should be in place, and increased as increasing evidence of virus is found (especially human cases) in the current year.

* High-risk indicators of transmission to humans: increasing dead bird sightings; high mosquito infection rates; abundant bridge vector populations; increasing mammal (horse) cases; proximity of mosquito breeding sites to human populations (especially large population centres) and weather conditions that favour mosquito breeding.

1. These are minimum activity standards. Medical Officers of Health may increase the Zone size to be treated or take additional mosquito control actions, if justified by scientific data or recommendations.
2. Medical Officer of Health will maintain a means to record, investigate, and report any confirmed or likely adverse or unintended human health effects attributed to mosquito control actions, and will report any non-human environmental adverse effects that he or she knows about to the Ministry of the Environment and/or other relevant local or provincial authorities.

Addendum to Appendix 7 (O. Reg. 199/03)

Implementation Aspects related to Ontario Regulation 199/03

2003 West Nile virus Season

The West Nile virus is a relatively new disease agent, with only four years of known occurrence in the Western Hemisphere, and two years in Ontario and Canada. With each passing year, the body of knowledge about the virus – and about the measures needed for surveillance, prevention and control – continues to accumulate in North America.

The *West Nile Virus Preparedness and Prevention Plan for Ontario*, and the attendant risk assessments made by local Medical Officers of Health (*Section 1* of the Regulation), seek to reflect this evolving body of scientific knowledge. Moreover, the evolving epidemiology of the virus requires enhancements or adjustments in the capacity of the public health system to engage in, or facilitate, the necessary surveillance, prevention and control measures. These two general factors – "the state of the science" and "the state of capacity" – guide the "generally-accepted practices in the field of public health" (*Section 2* of the Regulation).

The risk assessments for West Nile virus are predicated on the understanding that the general goal of public health intervention is to reduce the risk to human health - zero risk is unachievable - at a population level and interventions therefore are aimed at populated areas.

Section 4 of the Regulation states those actions that "may" be included in the notices given by the Medical Officers of Health to municipalities. The numerous and sometimes unique local factors to be considered in making the risk assessments preclude the institution of an *a priori*, centrally-mandated, fixed set of responses for each local jurisdiction. Whatever decisions are taken, however, they should be recorded, with the accompanying rationale.

With regard to *Subsection 4 (d)* and the accompanying "Table 1" ("*Larviciding and Adulticiding in Ontario*"), the following elaborations or clarifications apply:

(1) When a health unit or municipality "moves" to a different "status" of West Nile virus findings in the current year (*far-left column of Table 1*), the recommended action does not preclude actions taken or started during the prior status. For example, when "non-human" evidence of the virus is found, and larviciding around a "hot spot" is indicated, this action would be *in addition to* any prior larviciding that was indicated *before* evidence of the virus was found.

(2) A "*hot spot*" is defined as a collection of two or more local positive findings in dead birds, mosquito pools or mammals (or a combination thereof) which indicate either epizootic transmission or persistent enzootic transmission – as distinct from "*isolated*" findings in such non-human hosts or vectors. The indication for larviciding is thus for the "hot spot", not an isolated finding. The other prerequisites for larviciding include establishment of the presence of the larvae and their breeding sites, the appropriate timing and seasonality, and the overall assessment of West Nile virus risk to the local population.

(3) The main goal of larviciding is the reduction of the local enzootic vector population in their identified breeding sites (e.g., catch basins, other container structures, etc.)

(4) With regard to adulticiding, the 3 kilometre (km) radius "zone" size is <u>not</u> a "hard and fast" rule. The actual physical extent of adulticide application is pre-eminently governed by the need to reduce the risk from epizootic or bridging vector populations near the local human population, while minimizing any unintended application (e.g., through drift) to non-target areas, species or populations.

Footnote #1 states that "*Medical Officers of Health may increase the Zone size to be treated . . .*" They *may* also *decrease* the zone size if an application of 3 km radius is not necessary to protect the local human population. For example, the "target area" may be on the outskirts of a town, where there are no persons residing beyond the town boundary for several kilometres. Or there may be an adjacent industrial area with no evidence of flying mosquitoes or breeding sites. Or if a 3-km zone would overlap an adjacent area that is already being, or has recently been, treated with adulticide.

(5) In the asterisked (*) footnote, the stated "*high-risk indicators of transmission to humans*" may be present <u>before</u> there is confirmation of a human case locally; this would mean that these are indicators of an *increased risk* of transmission to humans. <u>More than one</u> of these high-risk indicators should be evident before the decision is made to adulticide, in the *absence* of a human case.

(6) "Human case" means <u>confirmed</u> human case, according to the "Case Definition for Ontario", as stated in the main body of this document.

(7) Table 1 indicates that an adulticiding action *may* correspond to the finding of <u>one</u> human case (or "a few in a space-time cluster"). The operative word is "*may*" – refer to the wording of Section 4 (". . . *may include, without being limited to*"). Thus it is possible that adulticiding may *not* be ordered after the detection of every human case, for reasons of timing, prior treatment decisions, and the overall assessment of the risks versus benefits of that action.