Executive Summary

Peel Public Health's 2007 West Nile Virus Prevention Plan identifies the activities Peel Public Health intends to carry out in order to comply with Ontario Regulation 199/03 "Control of the West Nile Virus." Under Regulation 199/03, the local Medical Officer of Health (MOH) is required to conduct a risk assessment of the conditions pertaining to the West Nile Virus (WNV) in the health unit. The risk assessment identifies the probability of human infection based on WNV surveillance activities as well as other pertinent information elements. Completion of the risk assessment in accordance with the regulation offers guidance to the MOH regarding appropriate WNV reduction activities, and if needed, provides a review of appropriate mosquito reduction activities (i.e. larviciding or adulticiding) and their effectiveness.

Information from past seasons has been used to prepare this plan for WNV prevention in Peel for 2007. To ensure a coordinated approach in preventing mosquito-borne disease outbreaks in the Region of Peel, Peel Public Health is working closely with local municipalities and conservation authorities, the Ontario Ministry of Health and Long-Term Care (MOHLTC), the Ontario Ministry of the Environment (MOE), Health Canada (HC) and neighbouring public health departments.

Peel Public Health's approach to WNV control will emphasize disease prevention in humans and protection of the environment. The goal of the West Nile Virus Prevention Plan for 2007 is to minimize the impact of WNV on human health through region-wide surveillance and Integrated Mosquito Management (IMM). This means an emphasis on public education, source reduction and larviciding. If the level of WNV in Peel increases, then education, surveillance, and reduction will be intensified. Adult mosquito reduction will only be considered should surveillance findings indicate a significant risk to human health despite the implementation of other measures.

In 2007, Peel Public Health will continue surveillance and education activities (education for the public and medical providers). Peel Public Health will also continue the region-wide effort to reduce mosquito breeding through source reduction and larviciding in the urban, suburban and settlement areas of Peel. Source reduction and larviciding will focus on *Culex pipiens* and *Culex restuans* mosquitoes, the main vectors of WNV in Peel. These two mosquito species breed in stagnant water lasting more than a week in sites such as catch basins, road side ditches, culverts and artificial containers (abandoned swimming pools, tires, buckets, etc.). These mosquito habitats will be priority targets for elimination through improved maintenance, and for larviciding where stagnant water cannot be removed. Other mosquito habitats such as marshes and natural ponds will only be treated if they are found to be important to local WNV transmission. Surveillance of birds and mosquitoes provides an early warning of the risk to human health. This information will be used to enhance mosquito

reduction and education efforts in high risk areas to interrupt the amplification of WNV before it has a significant impact on human health.

The West Nile Virus Prevention Plan 2007 is consistent with the recommendation from the Centers for Disease Control and Prevention in the United States which states:

> To decrease the risk for human WNV infection, the coordinated and phased public health response to detection of WNV activity in an area should include intensified mosquito-control activities that reduce the avian-mosquito amplification cycle. Prevention activities should continue to include: 1) public education programs urging residential source reduction and personal protective measures to reduce mosquito exposure; 2) development of long-term, community-level, integrated mosquito surveillance and control programs; and 3) high-priority emphasis on the control of *Culex* mosquitoes, especially in urban and suburban areas. (MMWR December 20, 2002. / vol. 51/ No.50)

The West Nile Virus Prevention Plan 2007 includes the following components:

Public Education and Community Outreach:

Peel Public Health will continue to maintain public awareness of mosquito-borne disease, risk, surveillance and prevention through the media, our website (www.peel-bugbite.ca), and advertising in local publications. Educational materials will be sent to special groups: long-term care facilities, child care centres, garden centres, parks and recreation departments, physicians, golf courses and horticultural societies. Educational materials will also be sent to various seniors' groups in all three municipalities (e.g., Mississauga Seniors' Centre, Brampton Senior Citizen Council). Weekly status updates will be widely distributed and posted on the website. Peel Public Health will ensure that all public notification requirements for larviciding and adulticiding (if needed) are met. Accurate and timely information on these mosquito reduction activities will be provided to the public, including application schedules, location of the interventions, type of pesticides being used and how to reduce exposure.

Human Surveillance:

A system for detecting mosquito-borne diseases among humans will include active monitoring for suspected cases of viral encephalitis and aseptic meningitis in local hospitals from July to September. Health care providers play a critical role in the detection, prevention and clinical management of mosquito-borne diseases. A late spring edition of Peel Public Health's medical information letter, Health Professionals Update, focusing on WNV will be distributed to health care providers in the Region of Peel with subsequent updates as needed.

Host (Dead Crow) Surveillance:

Peel Public Health will monitor infection and illness in birds, focusing on crow and blue jay deaths. Reports of dead birds will be received from the public six days a week (Monday to Saturday) from early May to the end of September. Viral testing of a limited number of crows and blue jays will be performed by the Canadian Cooperative Wildlife Health Centre (CCWHC) in Guelph in 2007.

Mosquito Surveillance:

Peel Public Health will monitor mosquitoes across the region by collecting larvae and adult mosquitoes to determine the distribution, density and species. Adult mosquito traps will be located in each regional ward in Mississauga, Brampton and Caledon. Adult mosquitoes will be collected weekly from mid-June to the end of September. The adult mosquitoes will be shipped to the mosquito laboratory service provider for counting, identification and viral testing. Seasonal field staff will survey a wide range of aquatic habitats for the presence of mosquitoes in the larval stage from mid-May to late September. Larval surveillance also involves the collection and identification of the larvae found at the breeding sites. Mosquito surveillance data will be used in decision-making about public education and mosquito reduction activities.

Pesticide Effects Surveillance:

Peel Public Health does not anticipate adverse human health effects from the mosquito reduction measures in this plan. However, health care professionals will be informed about potential health effects of pesticide exposure and the need to report pesticide-related illness to Peel Public Health. Surveillance for any adverse effects of pesticide exposure due to either larviciding or adulticiding will be conducted. In addition, Peel Public Health will work with other agencies to monitor possible ecosystem effects from pesticide use.

Larval Mosquito Reduction:

Peel Public Health will reduce mosquito breeding by identifying and referring priority stagnant water sites to the local municipalities for remediation and by the application of larvicide to sites on municipal property that cannot be emptied or drained. There will be an emphasis on *Culex species* (the main vectors of WNV in Peel) and their breeding sites located in urban and suburban settings. Through a public information campaign, Peel Public Health will urge residents to reduce breeding sites around their homes.

Peel Public Health and other Regional and area municipal departments will respond collaboratively to public concerns about significant areas of artificial stagnant water lasting longer than a week between May 15 to August 31.These sites will be individually assessed by Peel Public Health for their significance as breeding sites and dealt with through land owner education, property standards by-laws, or public health legislation as appropriate to the circumstances. Small

accumulations of stagnant water, such as in a birdbath or children's toys left outside, will be dealt with by education alone.

These activities will be augmented with the application of larvicide to priority breeding sites where water cannot be eliminated, including roadside catch basins in the Cities of Brampton and Mississauga, and in towns, villages and rural subdivisions of the Town of Caledon. As in previous years, the Medical Officer of Health will issue an Order to each local municipality ordering them to assist in and facilitate the application of larvicides to municipal roadside catch basins. Larval surveillance data collected this year will be used to develop plans for mosquito reduction efforts in 2008.

Adult Mosquito Reduction:

Peel Public Health has developed a contingency plan for the reduction of adult mosquitoes by the application of the pesticide "Malathion" through ground spraying. In the event that a significant risk to human health occurs despite the successful implementation of the other components of this plan, adult mosquito reduction may be conducted. Habitat, weather, time of year, surveillance information and the proximity to human populations will be considered in determining the need for adult mosquito reduction measures. The accuracy, quality and efficacy of the adulticide application will be closely monitored to ensure compliance with Provincial guidelines. If application of adulticides becomes necessary, Peel Public Health will provide advance notice to Regional Council, the public and to health care providers.