

## Program/Service Information Report

# 2018 West Nile Virus Summary

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**To:** Board of Health

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**Prepared By:** Mike Coburn, Public Health Inspector, Environmental Health  
Patty Montague, Health Promotion Specialist, Health Protection  
Shawn Zentner, Manager, Environmental Health

**Approved By:** Christopher Beveridge, Director, Health Protection

**Submitted By:** Dr. Nicola J. Mercer, MD, MBA, MPH, FRCPC  
Medical Officer of Health & CEO

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## Key Points

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- Wellington-Dufferin-Guelph Public Health (WDGPH) implemented its 16<sup>th</sup> consecutive West Nile Virus (WNV) Prevention Program in 2018.
- This program aims to reduce human WNV exposure through public education, larval and adult mosquito surveillance and larviciding activities.
- WDGPH contracts Canadian Centre for Mosquito Management Inc. (CCMM) and Entomogen Inc. to accomplish WNV field activities.
- City of Guelph Property Standards staff addressed 11 standing-water complaints.
- Outside of the City of Guelph, CCMM addressed 3 standing water complaints.
- No human cases of West Nile Virus (WNV) were confirmed within the borders of Wellington-Dufferin-Guelph (WDG) in 2018.
- Two avian cases of WNV were reported.
- Two WNV-positive mosquito pools were identified in WDG.
- Public education included: key messages to prevent mosquito bites, elimination of standing water on private property to reduce mosquito-breeding areas, and to contact WDGPH to request free larvicide treatment for municipally-owned catch basins on private property through online and print materials.

## Strategic Directions & Goals

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Building Healthy Communities - We will work with communities to support the health and well-being of everyone.

- We will work to improve health services for priority populations.
- We will promote healthy environments that support physical and mental health and well-being.
- We will increase community awareness of public health programs and services.

Health Equity - We will provide programs and services that integrate equity principles to reduce or eliminate health differences between population groups.

- We will engage communities with more opportunities for collaboration.
- We will increase community awareness of public health programs and services.
- We will enhance our understanding of the local needs and priorities of the communities we serve and develop programs and services in response to those needs.

## Operational Plan Objectives

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- Provide public education Mosquito control and avoidance.
- Work with contracted provider to coordinate catch basing larviciding.
- Work with municipal partners to obtain information and authority to apply larvicide to catch basins.
- Support 3<sup>rd</sup> party provider to obtain MOECC permit to apply larvicide.
- Conduct public notification of start date of larvicide campaign.

## Summary of OPHS Program Requirements

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### OPHS Program:

- Develop a local vector-borne management strategy based on surveillance data and emerging trends in accordance with the Infectious Diseases Protocol.

### Goals:

- Public health practice responds effectively to current and evolving conditions and contributes to the public's health and well-being.
- To prevent or reduce the burden of infectious diseases of public health importance.

- To prevent or reduce the burden of illness from health hazards in the physical environment.

### Strategy:

- Assessment and Surveillance
- Disease Prevention/Health Protection
- Health Protection

### Requirements:

- # catch basins treated with larvicide
- Amount of standing water treated with larvicide
- # adult mosquitos captured in traps
- # WNV positive mosquito pools

### Accountability Indicators:

- None.

### Performance variance or discrepancy identified:

- No.

## Highlights

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### Larvicide Program

The 2018 larvicide program involved larval surveillance, catch basin (storm drain) and surface water treatments, post-treatment surveillance, live adult mosquito trapping, and responding to standing water complaints, all of which were conducted by the Canadian Centre for Mosquito Management Inc. (CCMM). Mosquito species identification and viral-testing of adult mosquitoes were carried out by Entomogen Inc. Standing water complaints within the borders of the City of Guelph were addressed through the City of Guelph's Standing Water By-law (By law Number (2003) – 1719) by the City of Guelph's Property Standards Inspection Department and with WDGPH and CCMM staff. Catch basin treatments began on June 8<sup>th</sup> and ended on August 31<sup>st</sup>, 2018. During that time, there were a total of 99,706 roadside catch-basin larvicide treatments made.

Stagnant surface-water sites received 1584 site inspections and 258 applications of larvicide, beginning June 18, 2018 and ending on September 28, 2018. All treatments were made to surface-water sites that had been identified in previous years as

potentially important and all treated sites were located on public property. The predominant stagnant-water sources for mosquito development were storm-water management ponds and roadside ditches. In total, 2.63 hectares of stagnant surface-waters were treated with larvicide.

In May 2018, a Public Notice was placed in local newspapers more than two weeks before larviciding treatments began. Public notification is required by the Ministry of the Environment and Climate Change in the process of obtaining larvicide application permits. The public was encouraged to have catch basins located on their own properties treated. Larviciding service was offered for free and was promoted through a media release and the WDGPH website.

The public was encouraged to notify WDGPH of areas of standing water that may be conducive to mosquito-breeding. A total of 11 standing water complaints were addressed by City of Guelph's Property Standards staff and three standing water complaints were registered outside the borders of the City of Guelph.

Weekly collection of adult mosquitos, for species identification and viral analysis, began June 18, 2018 and ended on September 25, 2018. A total of 12 trap-site locations were selected throughout WDG. Of 173 traps, 171 mosquito trap samples were forwarded to Entomogen for analysis, during 12 weeks of collection.

## Surveillance

Surveillance activities, in 2018, included the collection of both adult and larval life stages of the vector species, *Culex restuans* and *Culex pipiens*. The presence of larval vector species determined whether larvicide would be applied. As described above, trapped adults were sent to Entomogen Inc. for species identification. Identified vector and bridge species were grouped together into pools (groups of mosquitoes of the same species) and tested for the presence of WNV. From a total of 171 trap samples received, 362 mosquito pools were tested, and two pools were found to be positive for WNV. The mosquitoes for these positive pools were trapped in Arthur and Shelburne.

Compared to previous years, WDGPH saw a decrease in the number of human infections, despite an increase in the number of vector species and the number of positive mosquito pools. There were two human infections in 2017 and no human infections in 2018. The overall number of adult mosquitoes trapped increased from 3,116 in 2017, to 10,098 in 2018 with a corresponding increase in the number of WNV

vector species (18.1% of all mosquitoes trapped in 2018, compared to 1.64% in 2017). Of the 10,098 mosquitoes trapped, 7,761 were identified to species.

## Public Education

Public education efforts continued, in 2018, to convey WNV concerns and the simple steps that can be taken by the public to reduce their risk of contracting the virus. Key messages included: steps to prevent mosquito bites, elimination of standing water on property to reduce mosquito breeding areas and public encouragement to contact WDGPH for free larvicide treatment for municipally-owned catch basins on their property.

## Conclusion

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WNV exists in WDG and will continue to be a presence in the future if there are Corvid birds to act as reservoirs for the virus and mosquito vectors to transmit the virus to humans. As well, environmental factors, relevant to the spread of WNV, are complicated and unpredictable. Subsequently, forecasting mosquito populations and potential virus activity is not practical or feasible. Vigilant surveillance, larviciding and educational efforts, in 2019 and beyond, are important, and will continue to be the most effective tools WDGPH can use to prevent the spread of WNV.

## Related Reports

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- BOH Report - BH.01.APR0418.R08 - 2017 West Nile Virus Summary.

## Appendices

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None.