The Regional Municipality of Durham
COUNCIL INFORMATION PACKAGE
March 24, 2017

Information Reports

2017-INFO-33 Commissioner of Planning and Economic Development – re: 2018 Skate Canada Synchronized Skating Championships

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Early Release Reports

There are no Early Release Reports

Staff Correspondence

1. Memorandum from Dr. R. Kyle, Commissioner and Medical Officer of Health – re: 2016 Year-End Indicator Summary Tables

Durham Municipalities Correspondence

1. Township of Uxbridge – Motion adopted at their General Purpose and Administration Committee meeting held on March 6, 2017, regarding Durham Community Climate Adaptation Plan

Other Municipalities Correspondence/Resolutions

1. Town of Ingersoll - Resolution passed at their Council meeting held on March 6, 2017, regarding developing a policy that would enable all schools and school boards in Ontario to have an Automated External Defibrillator installed

2. Municipality of Middlesex Centre – Resolution passed at their Council meeting held on March 8, 2017, regarding developing a policy that would enable all schools and school boards in Ontario to have an Automated External Defibrillator installed

3. Township of East Zorra-Tavistock - Resolution passed at their Council meeting held on March 15, 2017, regarding developing a policy that would enable all schools and school boards in Ontario to have an Automated External Defibrillator installed

4. Town of Northeastern Manitoulin & The Islands – Resolution passed at their Council meeting held on March 7, 2017, requesting the Province of Ontario waive delivery fees for residents of the Town of Northeastern Manitoulin and The Islands

Miscellaneous Correspondence

1. Sylvia Jones, MPP Dufferin-Caledon writing to Regional Chair Anderson & Members of Council that as the new Progressive Conservative Critic for Infrastructure, ensuring to hold the provincial government to account on its announcements and plans for infrastructure projects across the province

Advisory Committee Minutes

1. Durham Agricultural Advisory Committee (DAAC) minutes – March 7, 2017

Action Items from Council (For Information Only)

Action Items from Committee of the Whole and Regional Council meetings

Members of Council – Please advise the Regional Clerk at clerks@durham.ca by 9:00 AM on the Monday one week prior to the next regular Committee of the Whole meeting, if you wish to add an item from this CIP to the Committee of the Whole agenda.

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2564

The Regional Municipality of Durham
Information Report

From:	Commissioner of Planning and Economic Development
Report:	#2017-INFO-33
Date:	March 21, 2017

Subject:

2018 Skate Canada Synchronized Skating Championships

Recommendation:

Receive for information

Report:

1. Purpose

1.1 The purpose of this report is to inform Council that with the assistance of the Region's Sport Tourism Staff, the City of Oshawa was selected as the host of the 2018 Skate Canada Synchronized Skating Championships.

2. Background

2.1 Skate Canada's annual Synchronized Skating Championships generates an economic impact of approximately $2 million provincially, with $1.2 million occurring locally in the host community. The event hosts 40 teams for a total of 800 skaters from across Canada and requires approximately 2,100 hotel room nights. Teams compete for national titles in the senior, junior, open, intermediate and novice categories. The top two senior teams represent Canada at the International Skating Union (ISU) World Synchronized Skating Championships.

2.2 In the spring of 2016, Sport Durham staff coordinated with the City of Oshawa, Tribute Communities Centre, Oshawa Skating Club, Whitby Ice Fyre synchronized skating team, and garnered support from other community partners to develop a bid to host the 2018 Skate Canada Synchronized Skating Championships in Oshawa. On June 13, 2016, City of Oshawa Council approved a recommendation to fund a

portion of the Tribute Communities Centre base rental fees in the amount of $25,000, should Oshawa be awarded the bid. The bid was submitted by the City of Oshawa on June 30, 2016.

2.3 On September 22, 2016, Skate Canada toured the Tribute Communities Centre and local hotels with bid committee members from Sport Durham, the City of Oshawa and Tribute Communities Centre.

2.4 In a media release issued on February 24, 2017, Skate Canada officially announced that the 2018 Synchronized Skating Championships was awarded to Oshawa, and will be held at the Tribute Communities Centre from February 23 to 25, 2018.

3. Conclusion

3.1 The event will be planned, promoted and executed by Skate Canada in collaboration with Sport Durham, the City of Oshawa, Spectra Venue Management at the Tribute Communities Centre and local skating clubs. In addition to the economic benefits this event will bring to Oshawa and Durham Region, it will elevate the profile of synchronized skating in our community, enhance sport culture, provide residents with an opportunity to experience an exciting, national sport event first-hand, and showcase our community to visitors from across Canada.

Respectfully submitted,

Original signed by

B.E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2805

The Regional Municipality of Durham
Information Report

From:	Commissioner of Social Services
Report:	#2017-INFO-34
Date:	March 24, 2017

Subject:

Report of the Income and Employment Support Division for the Period Ended December 31, 2016

Recommendation:

Receive for information.

Report:

1. Purpose

1.1 The following report provides an overview of the Ontario Works (OW) caseload changes that occurred in 2016 for the period ended December 31, 2016.

2. Highlights

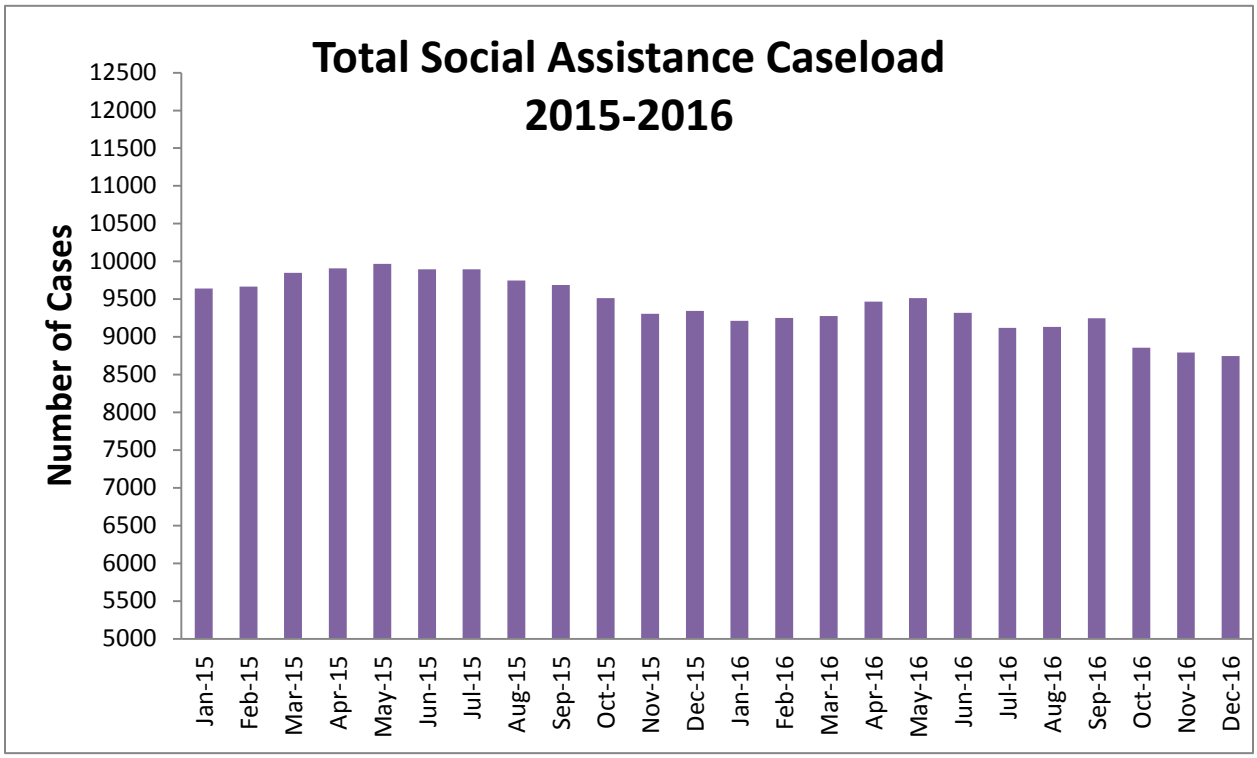
2.1 2016 Ontario Works Caseload

a. In 2016, the average number of cases decreased by 540 or 5.6 per cent from the average annual caseload in 2015 of 9,701 (see Exhibit 1).

- **Exhibit 1 – Quarterly Average Caseload Comparison[1]**

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Average Annual Caseload
2015	9,719	9,923	9,775	9,388	9,701
2016	9,246	9,433	9,166	8,799	9,161
Difference	**473**	**490**	**609**	**589**	**540**
Per Cent Change	**-4.9%**	**-4.9%**	**-6.2%**	**-6.3%**	**-5.6%**

- **Exhibit 2 – Monthly Caseload Comparison[2]**



3. 2016 Caseload by Local Municipality

a. The following section includes an overview of the per cent of OW caseload per population in Durham compared to the 2015 Annual Report on Statistics Canada Census within the local municipalities.

- **Exhibit 3 – Caseload and Population Comparison**

Municipality	Average Cases 2016	Population 2016	% of Cases per Population
Ajax	1,197	124,400	0.97%
Brock	130	11,700	1.11%
Clarington	782	96,200	0.82%
Oshawa	4,965	162,500	3.07%
Pickering	778	95,600	0.82%
Scugog	97	22,200	0.44%
Uxbridge	81	21,800	0.37%
Whitby	1,085	134,700	0.81%
Total	**9,161**	**660,760[3]**	**1.37%**

4. Conclusion

4.1 The Ontario Works caseload in Durham had decreased by 540 cases in 2016 compared to 2015. The Income and Employment Support division will continue to monitor the caseload changes closely and report back to this Committee.

Respectfully submitted,

Original signed by:

Dr. Hugh Drouin
Commissioner of Social Services

[1] Cognos SAMS Report 380 Average Time/Average Earning Report
[2] Cognos SAMS Report 380 Average Time/Average Earning Report
[3] 2016-INFO-33, http://www.durham.ca/departments/planed/planning/stats-n-facts/2016-INFO-33.pdf

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2564

The Regional Municipality of Durham
Information Report

From:	Commissioner of Planning and Economic Development
Report:	#2017-INFO-35
Date:	March 21, 2017

Subject:

Updated Durham Cycle Tours Map

Recommendation:

Receive for information

Report:

1. Purpose

1.1 The purpose of this report is to inform Council of the updated Durham Cycle Tours map, launched at the Toronto International Bicycle Show on March 3 to 5, 2017. The Durham Cycle Tours map is produced by the Economic Development and Tourism Division, in collaboration with the Planning Division. Geared toward experienced recreational road cyclists, the map provides residents and visitors with suggested routes that highlight some of the best cycling experiences in Durham Region.

2. Background

2.1 The first Durham Cycle Tours map was launched by Durham Tourism in March 2013. The map included 10 suggested cycle routes across Durham Region and listed the over 70 businesses that were part of the Welcome Cyclist Network.

2.2 In early 2016, staff in the Planning and Economic Development Department initiated a project to update the Durham Cycle Tours map which included input from the Works and Legal Departments as well as the Region's Accessibility Coordinator.

2.3 In the spring of 2016, Sport Durham began an outreach program to further expand the number of bicycle friendly businesses in Durham Region. Activities included engaging Ontario By Bike (formerly known as the Welcome Cyclist Network) to facilitate a cycle tourism workshop attended by over 50 local stakeholders, developing a bike rack subsidy incentive contest for new Ontario By Bike certified businesses, and coordinating targeted outreach to selected businesses with the support of Ontario By Bike and local area municipalities.

2.4 Sport Durham and Planning staff also consulted with local cyclists and representatives from all eight local area municipalities to develop new cycling routes and to update and enhance existing routes. The Regional Cycling Plan and Regional and municipal cycling facilities were also taken into consideration during development of these routes.

2.5 The updated Durham Cycle Tours map includes a number of features:

a. Four new cycling routes (Greenbelt Route, Beaverton/Cannington Route, Oshawa Urban Loop and Scugog/Uxbridge Loop), for a total of 14 curated cycling routes spanning a distance of more than 700 kilometres, with both on-road and off-road elements. The new map also features smaller inset maps of individual routes to complement the full Durham Region map.

b. Highlights the ninety-eight Ontario By Bike certified bicycle friendly tourism partners in Durham Region (more than 10 per cent increase since the map was last updated in 2014), including accommodations, attractions, bike stores, cafes and restaurants, wineries, breweries and visitor information centres.

c. Printed on waterproof paper for increased durability.

d. New section on cycling trip planning, including information on where to find up-to-date road conditions online.

e. Downloadable individual GPX cycling route files onto their GPS devices to guide them in their travels.

2.6 20,000 copies of the Durham Cycle Tours map are being printed. Copies are being distributed to local area municipalities, bicycle shops, cycling clubs and other tourism partners. Maps will also be distributed at cycling and other tourism events.

2.7 A news release announcing the launch of the updated Durham Cycle Tours map was issued on March 6, 2017 and social media campaigns have begun. The map was discussed on Toronto's 680 News radio station on March 6 and Durham Tourism has received numerous calls from individuals interested in receiving the updated map.

2.8 The Sport Tourism Coordinator and one of the Department's Planning and Economic Development GIS Graphics Technicians are being recognized for their work on the updated Durham Cycle Tours map through the 2016 Commitment to Excel awards program in the category of Innovation.

2.9 Cycle tourism continues to increase across Durham Region. Through initiatives like the updated Durham Cycle Tours map, Sport Durham staff will continue to work to further advance cycle tourism in the Region.

3. Conclusion

3.1 An accessible version of the Durham Cycle Tours map can be viewed online at https://www.durhamtourism.ca/brochures/DurhamCycleTours.pdf.

Respectfully submitted,

Original signed by

B.E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3111

The Regional Municipality of Durham
Information Report

From:	Commissioner & Medical Officer of Health
Report:	2017-INFO-36
Date:	March 24, 2017

Subject:

2016 Annual Vector-borne Diseases Report

Recommendation:

Receive for information

Report:

1. The Durham Region Health Department's (DRHD's) Vector-borne Diseases (VBD) Program includes the implementation of the Region's West Nile Virus (WNV) Control Plan. This plan includes larval mosquito surveillance and a larviciding program associated with catch basins, storm water management ponds and standing water. Between mid-June and September, the DRHD also conducts adult mosquito surveillance that includes trapping of adult mosquitoes and sending these samples to be speciated and tested for the presence of WNV and Eastern Equine Encephalitis virus (EEEV). In addition the program includes surveillance for eastern equine encephalitis (EEE), Lyme disease (LD), malaria, plague, tularemia and yellow fever.

2. Effective 2008, all local public health agencies are required to prepare and submit an annual summary report to the Ontario Ministry of Health and Long-Term Care. RHD's 2016 Annual VBD Report is attached. This report will be posted on the Region's website.

3. The 2016 Annual VBD Report includes the following information:

    - The report provides an executive summary which summarizes surveillance and control activities undertaken in relation to WNV since 2012. Some of the successes and challenges related to the WNV program are listed in the report as well.

    - The roles and responsibilities of municipalities, Works departments, school boards, and the DRHD in relation to the Durham Region WNV Response Plan are summarized.

- Plans for WNV surveillance and control for 2017 are included in this report.

- The number of adult mosquitoes trapped, identified and tested for WNV from 2012-2016 along with the positive WNV pools (batches) and percentage of mosquito species that are known to amplify WNV in the bird population or transmit WNV to humans are summarized. A total of **42** pools (batches) of adult mosquitoes have tested positive for WNV in Durham Region since 2012. There were **10** WNV positive pools of mosquitoes identified in Durham Region in 2016.

- The number of reported human cases of WNV is provided. There were **10** confirmed and **4** probable human cases of WNV reported in Durham Region between 2012 and 2016. There was **1** confirmed and **1** probable case of WNV reported in 2016

- A summary of vector control measures (catch basin and surface water larviciding) is provided. Since 2003, catch basins on Regional and municipal roadsides and selected properties have been larvicided. Roadside catch basins are treated with larvicide 3 times a season with 21 days separating each treatment.

- The number of surface water sites that have been monitored and treated since 2012 is presented. The number of surface water sites monitored has increased from **345** to **401** over the past 5 years while the number of sites where larvicide was applied ranged from **155** to **244**. The highest number of sites treated occurred in 2012.

- The total number of stagnant water complaints on private property investigated during the last 5 years is summarized. There were **134** complaints investigated registered between 2012 and 2016. In 2016, **10** complaints were investigated.

- A summary of public education and communication is provided. A summary of WNV data from the Rapid Risk Factor Surveillance System (RRFSS) which provides information on the resident's personal protective and household protective behaviours against mosquito bites is also included.

- A summary of LD data from the RRFSS which provides information on resident's awareness of LD and personal protective behaviours against tick bites is also included.

- The number of reported human cases of LD is provided. There were **44** confirmed and **20** probable human cases of LD reported in Durham Region from 2012 to 2016. In 2016 there were **16** confirmed human cases and **8** probable cases.

- Both active (dragging) and passive tick surveillance results have revealed the presence of positive ticks within Durham Region.

- In 2016 there were **6** cases of malaria, and **0** human cases of EEE, plague, tularemia and yellow fever reported in Durham Region.

Respectfully submitted,

Original signed by

R.J. Kyle, BSc, MD, MHSc, CCFP, FRCPC, FACPM
Commissioner & Medical Officer of Health

malaria

plague

yellow fever

tularemia

west nile virus

eastern equine encephalitis

lyme disease

zika virus

Vector-borne Diseases

DURHAM REGION

HEALTH DEPARTMENT

durham.ca

Annual Report 2016

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Vector-borne Disease Program Executive Summary

In 2003, the Ontario Ministry of Health and Long-Term Care (MOHLTC) mandated that all public health units (PHUs) in the province develop and implement a West Nile virus (WNV) control program. The objective of this program was to “prepare for, prevent, or mitigate the risk, if possible, of contracting WNV illness” (MOHLTC).

While the program was originally focused on the threat posed by the 2002 outbreak of WNV in Ontario, the program has now expanded to address the threats to human health posed by mosquitoes that may be carrying the Eastern Equine Encephalitis (EEE) and Zika viruses and by blacklegged ticks that may be carrying the bacteria that causes Lyme disease (LD). The program will continue to expand, as necessary, in response to potential threats from other vector-borne diseases of concern, including dengue fever, chikungunya, malaria, plague, tularemia, and yellow fever.

This report will focus on Durham Region’s surveillance, vector control, and health promotion activities related to WNV, EEE and LD. The report will also provide information and highlight ongoing surveillance activities related to the other vector-borne diseases of concern.

The Durham Region West Nile Virus Response Committee (DRWNVRC) is a local committee that was created under the authority of Regional Council to coordinate WNV response activities in Durham Region. The DRWNVRC is comprised of regional, municipal, conservation authority, and provincial representatives. The committee receives technical advice from the MOHLTC and Public Health Ontario (PHO), Ontario Ministries of Agriculture, Food and Rural Affairs (OMAFRA), Environment and Climate Change (MOECC), and Natural Resources and Forestry (MNRF).

In 2001, the DRWNVRC developed the *Durham Region West Nile Virus Response Plan,* in compliance with the requirements of the provincial *West Nile Virus Preparedness and Prevention Plan,* to effectively respond to the occurrence of WNV in Durham Region. The plan was first implemented in the spring of 2002 in response to WNV epidemiology during 2001.

The goal of the Response Plan is to provide an effective response to the presence of WNV in the Region. Its objectives are as follows:

- to limit the impact of WNV on human health
- to reduce the availability of larval mosquito development sites
- to educate the public about personal protective measures against mosquitoes

- to provide accurate and timely information on WNV to health professionals, the public, and the media
- to employ the principles of Integrated Mosquito Management (IMM) to reduce the risk that vector mosquitoes may pose to humans.

The Response Plan outlines the coordinated actions that are to be taken to protect the life and health of the citizens of Durham Region in response to the threat of WNV. It applies to Durham Region Health and Works Departments as well as all 8 Durham Region municipalities. The plan is a working document and, as such, is subject to updates and revisions as required.

Durham Region's response to WNV activity is organized into four levels, with the roles of the various stakeholder agencies being delineated for each response level. Durham Region is currently operating the Vector-Borne Disease Program at a Level 4 response level, which corresponds to one or more confirmed human cases of WNV being identified in the Region.

In 2003, in accordance with the requirements of the provincial *West Nile Virus Preparedness and Prevention Plan*, the DRWNVRC created a *Durham Region West Nile Virus Vector Control Plan* that lays out the specific measures to be implemented to reduce the number of WNV vector mosquitoes in Durham Region and thereby reduce the risk of exposure for Durham Region residents. The 4 major components of the Vector Control Plan now include: Adult Mosquito Surveillance; Larval Mosquito Surveillance and Control; Monitoring of Human Health Effects/Complaints; and Communication & Public Education.

During the 2013 WNV season, Durham Region Health Department (DRHD) participated in a working group, overseen by PHO. The working group developed a guidance document designed to assist PHUs to determine their need to institute adult mosquito control measures during any WNV season. The document, *Guide for Public Health Units: Considerations for Adult Mosquito Control*, was developed in response to Ontario experiencing, in 2012, the second highest number of WNV human cases and positive mosquito pools since the virus was first identified in Ontario in 2002.

Between 2001 and 2008, DRHD also conducted wildlife (dead bird) surveillance. During that period, a total of **52** WNV-positive birds were identified in Durham Region, with positive birds being found in each of the **8** local municipalities. However, because WNV was found to be present in the Ontario bird population annually, from 2001 to 2008, the MOHLTC discontinued its funding for dead bird surveillance in 2009. While DRHD no longer conducts active dead bird surveillance, it will continue to refer public requests for testing to the Canadian Cooperative Wildlife Health Centre (CCWHC), subject to a risk assessment.

The majority of the surveillance activities prescribed by the Vector Control Plan are conducted by DRHD staff, while any control activities are performed by a licensed pest control operator (PCO) under contract to the Region. During the 2016 WNV season the contracted, licensed, PCO was the Canadian Centre for Mosquito Management Inc. (CCMM).

Larval mosquito surveillance generally begins each year in early May. The larval mosquito component of the Vector Control Plan consists of weekly monitoring of surface water sites on public property in relation to the potential for these sites to support larval mosquito development.

A roadside catch basin monitoring and larviciding program has also been active since 2003. Historically, **3** rounds of catch basin larviciding have been conducted in Durham Region by a licensed PCO, with the first treatment round beginning in early-to-mid June, and subsequent treatment rounds occurring in July and August. A 21 day residual period is maintained between each round of treatment.

Catch basins on selected Durham Region properties, including long-term care homes, child care centres, and Regional housing, are larvicided once per season using a methoprene briquette formulation.

Adult mosquito surveillance (trapping and testing) was first implemented in late 2002, and has been undertaken every year since. Surveillance begins mid-June, and continues until mid to late September, depending on climate conditions. Traps are set up at predetermined locations throughout the Region. The locations are determined using the following criteria: site security, historical data (e.g., previous positive surveillance results), proximity to human populations, ease of access, and geographical distribution. Adult mosquitoes are trapped one day each week during the trapping period, and the captures are sent to an accredited laboratory where they are enumerated, identified by species, and tested for WNV.

Historically, in addition to conducting adult mosquito surveillance for WNV, DRHD has subjected any adult *Culiseta melanura* species captures to testing for the EEE virus. The virus is known to be maintained in a cycle between *C. melanura* mosquitoes and birds. However, in 2011, in response to an increase in EEE virus activity in the United States, the MOHLTC asked PHUs to modify their adult mosquito surveillance protocols to include species that may act as vectors/bridge vectors for the transmission of EEE virus to humans. Accordingly, DRHD implemented the modified surveillance protocols during each of 2011, 2012, and 2013. However, after finding no EEE virus-positive mosquito pools during any of those years, DRHD, in consultation with PHO, reverted to traditional surveillance protocols in 2014.

Human case surveillance, for WNV, EEE, LD, and the other vector-borne diseases of concern, is conducted by DRHD staff. The number of human cases of each disease,

reported to DRHD by physicians, is entered into the integrated Public Health Information System (iPHIS) data base and transmitted to the MOHLTC.

The accumulated surveillance data is used to assist DRHD to determine areas where additional vector surveillance and control activities (e.g., standing water site surveillance, adult mosquito trapping, mosquito larviciding) may have to be implemented.

DRHD investigates complaints regarding stagnant water, on regional and municipal land, in accordance with divisional policies and procedures. In consultation and cooperation with local municipalities, private standing water sites are individually assessed to determine the need for treatment and or remediation. This assessment includes dipping for the presence of mosquito larvae. If WNV vector larvae are present, a Section 13 Order, pursuant to the *Health Protection and Promotion Act* (HPPA), is issued to owner(s) of private property, requiring remediation of the mosquito development site. Where remediation is not possible, other vector control activities, such as the application of larvicide, may be considered.

DRHD also investigates complaints of human exposures to blacklegged ticks in relation to the potential for this species to carry and transmit *Borrelia burgdorferi,* the bacterium that causes LD. Any ticks submitted to DRHD, which have been associated with human contact, are sent to the National Microbiology Laboratory for identification. Once identified, all blacklegged ticks are further analyzed for the presence of *B. burgdorferi.* When specific geographic areas are identified as potential tick habitats, DRHD works with property owners to provide LD information, to conduct active tick surveillance, and/or to determine if properties can be remediated to reduce the risk of human contact with ticks.

Each year, Durham Region's WNV communication plan is updated with an aim to increasing community awareness of WNV and the personal precautions that can be taken to prevent transmission. The communication plan provides standing water prevention and personal protection information through a variety of means including the Durham Region website (durham.ca), local media (i.e., TV, radio, newsletters and newspapers), billboard and poster advertisements (i.e., shopping malls, arenas), and community events (e.g., health and safety fairs). In 2015 a weekly summary report on vector-borne diseases activities was developed and this is now distributed to community stakeholders throughout each WNV season.

A communication plan for LD was first developed in 2010. Since then, the Durham Region website has been updated annually to include information about endemic areas for LD in Ontario, disease transmission, and personal protective measures to avoid tick bites.

WNV and LD presentations are provided to community groups upon request, and various health promotion items have been produced and utilized at community events

and health fairs including an interactive LD game. Between 2011 and 2016, various community groups were targeted for distribution of the LD information including: Durham Region elementary schools, a provincial park, golf courses, horticultural societies, garden centres, riding stables and doctor's offices. As well, a number of WNV and LD articles were developed and distributed via various Regional and other agency newsletters.

The WNV communication plan has been evaluated regularly since 2002 using the Rapid Risk Factor Surveillance System (RRFSS) WNV modules. Since 2011, RRFSS has also been used to survey Durham Region residents regarding their awareness of LD and their use of personal protective measures to reduce exposures to ticks. RRFSS results are detailed later in this paper.

Program Successes:

Durham Region has experienced just **20** confirmed or probable human WNV cases between 2002 and 2016. There was **1** confirmed human case of WNV and **1** probable case reported in 2016.

Establishment of the DRWNVRC has served to streamline stakeholder communications and coordinate public education and vector control measures within the Region.

- Establishment of a partnership between municipal by-law departments and DRHD for the investigation of stagnant water complaints on private property. As per the agreement between DRHD and local municipal by-law enforcement officers, outlined in the Notice of Required Action (distributed annually to municipalities), municipal staff shall be the first to respond to investigate stagnant water complaints on private property. Where compliance is not achieved within 48 hours, complaints are forwarded to DRHD for follow-up action.
- Between 2003 and 2016, **567** stagnant water complaints on private property were investigated by DRHD staff. This number does not include complaints that were investigated by municipal by-law enforcement staff and where compliance was achieved without further action by DRHD.
- In most instances, property owners have complied promptly with DRHD requests to remediate sources of standing water (e.g., pool, pond, bird bath, land depression). In instances where compliance was not immediately achieved, a Section 13 Order, under the HPPA, was issued.
- During the 2016 WNV season, **8** new standing water Orders were issued; **6** Orders to residential property owners, and **2** Orders to our licensed PCO. Since 2003, a total of **94** Orders have been written. While most properties are promptly remediated once an Order is issued, **29** charges to property owners for "fail to

comply with an Order of a PHI" have been laid since 2003. In 2016, DRHD obtained a conviction in court for **1** such charge. No charges were laid in 2015.

- In general, WNV activity in mosquitoes, equines, and humans has been very low since the inception of WNV surveillance and control activities in Durham Region.
- Few equine cases of EEE have been reported in Durham and, to date, no human cases of EEE have ever been reported in Ontario.
- Active surveillance for blacklegged ticks has been conducted in various wooded locations within Durham Region since 2010. No ticks were found during active surveillance until the fall of 2013 when 19 blacklegged ticks were found in south Whitby. Since then blacklegged ticks have been found in a number of wooded locations across Durham Region.
- In the fall of 2014, blacklegged ticks, positive for *Borrelia burgdorferi*, were found during active surveillance activities in the Rouge Valley, Pickering. Positive blacklegged ticks were found there again in the fall of 2015. These finding have indicated that this is an established tick population and the Rouge Valley has now been designated as a "risk area" for Lyme disease by PHO.
- In the fall of 2016, **8** ticks were found at **3** different locations (in Durham Forest, Uxbridge, near the Waterfront Trail, Clarington, and in Darlington Provincial Park, Clarington. All of the ticks tested negative for *Borrelia burgdorferi* as well as the other pathogens that blacklegged ticks can carry. **None** of the ticks tested positive for *B. burgdorferi* bacteria.
- Signs, warning the public of the presence of blacklegged ticks, were posted in the fall of 2016 at the entrances to the Lynde Shores Conservation area (Whitby), and the Rouge Valley (Pickering) where populations of blacklegged ticks have become established.
- **Six** confirmed human cases of malaria were reported in Durham Region in 2016. In all 6 cases, travel to or residence in an endemic country was a risk factor.
- There were **no** reported cases of yellow fever, plague, or tularemia in Durham Region in 2016.

Program Challenges:

- Increase in workload as a result of continually increasing numbers of surface water sites and catch basins.
- Lack of consistency at the municipal level in relation to the maintenance and remediation of municipally and privately owned storm water management ponds (SWMPs). Although there are guidelines and best practices for the maintenance and design of SWMPs, it is not clear who enforces or oversees adherence to the relevant guidelines.
- Remediation of municipally-owned larval mosquito development sites such as ditches. While remediation of surface water sites that are larval mosquito development sites is always the preferred option, the financial reality is that these sites may take many years to be remediated. Furthermore, it is not feasible to remediate all surface water sites that are larval mosquito development sites.
- Remediation of derelict pools, ornamental ponds and/or other water features on private properties where the property has been abandoned by the property owner(s). In these instances, tracking the responsible property owners (i.e., individuals, financial institutions, property management firms, etc.) to enforce remediation of the standing water, can often involve a considerable amount of time and staff resources.
- Inconsistent and, in some cases, inadequate municipal property standards by-laws related to standing water on private property (i.e., derelict pools, ponds, etc.). Since not all local municipalities have such by-laws, it was necessary to establish a partnership with all 8 local municipal by-law enforcement departments whereby they conduct the initial investigation of stagnant water complaints on private property, but refer outstanding issues to DRHD staff when the issue cannot be resolved within 48 hours. With as many as 75 complaints regarding stagnant water occurring on private property each year, this can involve a considerable amount of DRHD staff resources.
- Identification of confirmed human cases of WNV and LD is problematic due to difficulties interpreting laboratory results and obtaining exposure histories and diagnoses from patients and physicians.

- The number of areas where blacklegged ticks are being established and the numbers of reported cases of LD are increasing annually. It is a continuing challenge to get information about LD symptoms and protective measures to prevent tick bites to physicians and the public. It is often difficult to determine whether a patient is a confirmed or probable case of LD due to the following factors:
    - Inadequate information from patients and or physicians regarding potential tick exposures, symptoms, and diagnosis and treatment;
    - Indeterminate laboratory test results
- Patients are not routinely tested for the European strains of LD. Rather, testing must be specifically requested. Therefore, it is important to determine if a patient has visited or resided and potentially been exposed to a tick(s) in Europe. Two of the 16 confirmed cases of LD reported were found to be positive for one of the European strains of LD.

2016 Annual Vector-Borne Disease Program Results And Summary Results (2012 - 2016)

West Nile Virus (WNV)

Overview:

WNV is maintained in nature in a transmission cycle that occurs between mosquitoes and birds. Mosquitoes become infected when they feed on the blood of a bird infected with the virus and they can then pass the virus on to other birds. The virus can be transmitted to humans and other mammals by mosquitoes that choose to feed on both birds and mammals. These mosquitoes are known as “bridge vectors”. Humans and other mammals (e.g., horses) are only incidental or “dead end” hosts and are generally incapable of transmitting the virus further. In rare instances, WNV has been transmitted within the human population through blood transfusions, organ or tissue transplants, and via breast milk.

WNV is endemic in many areas of the world including Africa, Europe, the Middle East, West Asia, South America, and throughout North America.

Most people infected with WNV will not develop any symptoms. When symptoms do develop, they appear within 3-15 days following the bite of an infected mosquito. They can range from mild fever, headache, and flu-like illness to severe neuro-invasive disease (meningitis, encephalitis or poliomyelitis) with rapid onset of symptoms including severe headache, high fever, stiff neck, muscle weakness, convulsions, paralysis, or coma. Severe WNV symptoms are more likely to occur in the elderly, the very young, and those with suppressed immune systems. There is no specific treatment for WNV once symptoms develop, and victims can only be provided with supportive care. In rare cases, WNV can result in death. However, most people do recover fully over time.

There is no human vaccine for WNV, so preventative measures are based on vector control and the use of personal precautions against mosquitoes.

Surveillance Results:

Equine Surveillance

Summary:

In 2016 in Ontario, **2** equine cases of WNV were reported by OMAFRA. Neither case occurred within Durham Region.

Vector Surveillance

Adult Mosquito Surveillance

Summary:

In 2011, the MOHLTC provided PHUs with new criteria for viral testing of adult mosquito captures so as to include vectors for EEE virus (EEEV) as well as WNV. DRHD instituted the new order of preference for viral testing in 2011 and utilized it during each of the 2011, 2012, and 2013 WNV seasons. After finding no EEEV-positive pools in any of those 3 years, DRHD, in consultation with PHO, reverted back, in 2014, to the 2010 order of preference for testing of adult mosquitoes as follows:

1. *Culex pipiens/restuans*
2. *Culex salinarius*
3. *Ochlerotatus japonicus*
4. *Culex tarsalis*
5. *Aedes vexans vexans/Aedes vexans nipponi*
6. *Ochlerotatus triseriatus*
7. *Anopheles punctipennis*
8. *Ochlerotatus trivittatus*
9. *Anopheles walkeri*
10. *Ochlerotatus stimulans*
11. *Anopheles quadrimaculatus*
12. *Ochlerotatus Canadensis*

Note: Durham Region's EEE surveillance results are included under a separate section entitled Eastern Equine Encephalitis (EEE) found later in this report.

In 2016, adult mosquito surveillance consisted of a network of up to **13** trap sites distributed over **7** of the 8 local municipalities. A total of **199** traps were set over a 16 week period extending from CDC week 24 (w/o June 13) to week 39 (w/o September 26).

A total of **9,347** adult mosquitoes were captured during the 2016 season. This is less than the numbers seen in 2014 (14,495) and 2015 (20,092).

Coquilletidia perturbans was the most dominant mosquito species captured in Durham Region in 2016, representing **53%** of total captures. While *Cq. perturbans* is not considered to be a very efficient WNV vector, it is thought that it may still play a role in WNV transmission to humans due to its relative abundance and aggressive nature.

The second most prevalent species of mosquito captured in Durham Region was *Culex pipiens/restuans* at **20%** species abundance. This species group is of particular concern since both *C. pipiens* and *C. restuans* are known to be efficient vectors of WNV in Ontario.

Species abundance numbers for the *Culex pipiens-restuans* group have increased over the past 3 years, from 9% in 2014 to 15% in 2015 and 20% in 2016.

The third most prevalent species was *Aedes vexans vexans* at 14% species abundance. *A. vexans* is a confirmed WNV bridge vector.

A total of **374** pools of mosquitoes were tested in 2016 using RT-PCR. **Ten** of the 374 pools tested positive for WNV. The 10 WNV-positive mosquito pools were comprised of *Culex pipiens/restuans* (9 pools) and *Aedes vexans vexans* (1 pool). There were 0 WNV-positive mosquito pools identified in either 2014 or 2015. In comparison, 15 WNV-positive mosquito pools (all *Culex pipiens restuans)* were identified in 2013, and 17 were identified in 2012.

2016

Trapping season: weekly basis, from **CDC week 24-39**

traps: **199**

mosquitoes captured: **9,347**

viral pools tested for WNV: **374**

WNV-positive pools: **10**

% *Culex pipiens/restuans* in the capture population: **20%**

% bridge vectors in the capture population: **67%** (Cq. Perturbans: 53%, *Aedes vexans*: 14%)

2015

Trapping season: weekly basis, from CDC week 24-38

traps: 175

mosquitoes captured: 20,092

viral pools tested for WNV: 440

WNV-positive pools: 0

% *Culex pipiens/restuans* in the capture population: 15%

% bridge vectors in the capture population: **79%** (*Cq. perturbans*: 30%, *Aedes vexans*: 29%, *Ochlerotatus trivittatus*: 7%, other: 13%)

2014

Trapping season: weekly basis, from CDC week 26-37

traps: 136

mosquitoes captured: 14,495

viral pools tested for WNV: 357

WNV-positive pools: 0

% *Culex pipiens/restuans* in the capture population: 9%

% bridge vectors in the capture population: 83% (*Cq. perturbans*: 53%, *Aedes vexans*: 15%, *Ochlerotatus stimulans*: 13%, other: 2%)

2013

Trapping season: weekly basis, from CDC week 24-38

traps: 175

mosquitoes captured: 15,980

viral pools tested for WNV: 320

WNV-positive pools: 15 (from 4 different municipalities)

% *Culex pipiens/restuans* in the capture population: 33%

% bridge vectors in the capture population: 53% (C*q. perturbans*: 44%, *Aedes vexans*: 9%)

2012

Trapping season: weekly basis, from CDC week 24-38

traps: 177

mosquitoes captured: 21,544

viral pools tested for WNV: 199

WNV-positive pools: 17 (from 4 different municipalities)

% *Culex pipiens/restuans* in the capture population: 9%

% bridge vectors in the capture population: 87% (*Cq. perturbans*: 83%*, Aedes vexans*: 4%)

Larval Mosquito Surveillance

Summary:

The number of standing water sites that are routinely monitored in Durham Region has increased in each of the past 5 surveillance years. However, the number of larvicide treatments required has decreased over the past 3 years.

When high counts of larval mosquitoes are observed, standing water sites are treated with larvicide, by the Region's licensed PCO, until 0 larvae are found for 3 consecutive weeks.

2016

DRHD's WNV field staff and licensed PCO staff conducted a combined total of **3,365** inspections of **401** identified standing water sites throughout Durham Region.

Inspections resulted in **684** larvicide treatments at sites where live mosquito larvae were found.

Information respecting relative species abundance was not provided by the current PCO contractor.

2015

DRHD's WNV field staff and licensed PCO staff conducted a combined total of 4,282 inspections of 395 identified standing water sites throughout Durham Region.

Inspections resulted in 625 larvicide treatments at sites where live mosquito larvae were found.

Information respecting relative species abundance was not provided by the current PCO contractor.

2014

DRHD's WNV field staff and licensed PCO staff conducted a combined total of 3,936 inspections of 384 identified standing water sites throughout Durham Region.

Inspections resulted in 852 larvicide treatments at sites where live mosquito larvae were found.

Information respecting relative species abundance was not provided by the current PCO contractor.

2013

DRHD's WNV field staff and licensed PCO staff conducted a combined total of 4,517 inspections of 365 identified standing water sites throughout Durham Region.

Inspections resulted in a 1,119 larvicide treatments at sites where live mosquito larvae were found.

Information respecting relative species abundance was not provided by the current PCO contractor.

2012

The most abundant larval mosquito species identified in 2012 was *Culex pipiens* (37% species abundance).

The second most abundant species identified was *Culex restuans* (21%), followed closely by *Culex territans* (19%).

In catch basins, *Anopheles* was the most abundant species collected (51% species abundance) followed by *Culex pipiens* (28%) and *Ochlerotatus Canadensis* (16%). All three species are confirmed WNV vectors in Ontario.

In SWMPs, *Culex sp.* were most abundant (60% species abundance) followed by *Anopheles sp.* (16%).

In natural sites, *Anopheles earlei* was the most abundant species identified (33% species abundance) followed by *Culex pipiens* (20%).

In ditches, the dominant species identified was *Culex pipiens* (24% species abundance).

Human Case Surveillance

Summary:

- There were **1 confirmed and 1 probable human case of WNV reported in Durham Region in both 2015 and 2016**. In contrast, 0 cases were reported in 2014 and 3 confirmed cases were reported in 2013. There were 5 confirmed and 2 probable human WNV cases reported in Durham Region in 2012 with 2 of these cases resulting in death.
- The Public Health Agency of Canada (PHAC) has reported **46 clinical human cases of WNV for Ontario** in 2016*. In contrast, 33 cases were reported in 2015, 10 cases in 2014, 53 cases in 2013 and 259 cases in 2012.
- **For Canada, PHAC reported 100 clinical human cases of WNV in 2016***. This is an increase from the 78 cases reported in 2015, and 21 cases reported in 2014.
- **In the United States, the US Centers for Disease Control and Prevention (CDC) reported 2,038≠ human cases of WNV in 2016.** For 2015 there were 2,060 cases and in 2014, there were 2,205 human WNV cases reported.

Note

* *As of November 12, 2016 for Ontario and Canada statistics, link: http://healthycanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/west-nile-nil-occidental/surveillance-eng.php#s1*

≠ As of January 17, 2017 for USA statistics, link: *https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata/histatedate.html*

2016

1 confirmed and 1 probable case of WNV were reported in Durham Region.

2015

1 confirmed and 1 probable case of WNV were reported in Durham Region.

2014

0 confirmed or probable cases of WNV were reported in Durham Region.

2013

3 confirmed cases of human WNV were reported in Durham Region. Two of the 3 cases experienced neurological complications while the other had milder symptoms. No deaths were reported.

2012

5 confirmed and 2 probable cases of human WNV were reported in Durham Region.

2 of the 7 reported cases resulted in death.

Table 1: Summary of Reported Confirmed and Probable Human Cases of WNV – Durham Region (2012-2016)

Year	# of Confirmed Human Cases	# of Probable Human Cases
2016	**1**	**1**
2015	1	1
2014	0	0
2013	3	0
2012	5	2

Vector Control Measures:

Monitoring and Treatment of Roadside Catch Basins

Summary:

Pre-treatment surveillance of **65** roadside catch basins commenced mid-May 2016 and then roadside catch basin treatments were initiated on June 13 (CDC week 24) in response to an increase in the numbers of *Culex* larvae found.

Product used: Altosid (methoprene) pellets which are designed to release effective levels of methoprene insect growth regulator for up to 30 days under typical environmental conditions.

Three rounds of roadside catch basin larviciding treatments were conducted in 2016, with the first round of treatment commencing June 13, 2016, and the third round ending mid-August. A 21 day residual period was incorporated between each treatment round.

During 2016, the total number of roadside catch basins treated was **154,743** (51,581 catch basins during each round of treatment).

Larvicide treatments occurred in all 8 Durham Region municipalities: Pickering, Ajax, Whitby, Oshawa, Clarington, Scugog, Uxbridge, and Brock.

Monitoring and Treatment of Backyard Catch Basins and Catch Basins located on Regional Property

Summary:

Selected catch basins, located on regionally-owned properties (including long-term care homes, child care centres, and regional housing), received larvicide treatments.

Backyard catch basins (i.e., municipally-owned catch basins located on private, residential properties) were treated upon request by the property owner, and based on a risk assessment.

A total of **389** regionally-owned and **93** backyard catch basins were treated in 2016. Treatments were scheduled to coincide, where possible, with the first round of roadside catch basin larviciding.

Product used: Altosid (methoprene*)* briquettes, designed to release effective levels of methoprene insect growth regulator over a period up to 150 days in mosquito breeding sites.

Table 2: Summary of Catch Basin Treatments (2012-2016)

Year	# of Roadside Catch Basins Larvicided	# of Backyard and Regional Facility Catch Basins Larvicided
2016	**154,743**	**482**
2015	161,799	392
2014	161,595	386
2013	157,855	404
2012	158,650	438

Monitoring and Treatment of Standing Water Sites

Summary:

The program involves routine monitoring of chronic standing water sites including municipally-owned SWMPs, ditches, field pools, etc. As noted above, under the heading Larval Mosquito Surveillance, DRHD and licensed PCO field staff combined to conduct a total of **3,365** standing water site inspections during the 2016 WNV season, resulting in **684** larvicide applications.

DRHD also responds to public complaints regarding standing water in privately-owned swimming pools, ornamental ponds, ditches, field pools, etc. A total of **10** new standing water complaints were registered in 2016.

Eight new standing water orders were issued, **6** to property owners and **2** to our licensed PCO, requiring remediation or treatment of the complaint sites.

Product Used: Vectobac (Bacillus thuringiensis israelensis) (Bti)

Treatment of standing water sites with Bti is dependent upon a risk assessment that takes into account the number and type (species) of larvae found, the time of year, the potential for timely site remediation, and WNV surveillance data obtained from Durham Region and other PHU jurisdictions.

Risk thresholds are as follows:

- For SWMPs ≥30 larvae in ≤10 dips to prompt an initial larviciding treatment. Thereafter, larviciding is initiated if any mosquito larvae are present;
- For derelict pools and ornamental ponds, > 0 larvae based on close proximity to human population and relative ease of remediation; and
- For ditches, field pools, etc. the potential for timely site remediation and risk assessment criteria are assessed.

Table 3: Summary of Standing Water Site Treatments (2012-2016)

Year	# of Standing Water Sites Routinely Monitored	Total # of Site Visits	# of Standing Water Sites Requiring Treatment	% of Standing Water Sites Requiring Treatment	# of Treatment Events
2016	**401**	**3,365**	**155**	**39%**	**684**
2015	395	4,282	185	47%	625
2014	384	3,936	163	42%	852
2013	365	4,517	226	62%	1,119
2012	345	3,083	244	71%	1,131

Table 4: Summary of Standing Water Complaint Investigations, Requests for Service, and PHI Responses (2012-2016)

Year	# Complaint Investigations	Requests for Service	PHI Responses
2016	**10**	**3**	**6**
2015	29	5	10
2014	34	9	13
2013	26	23	15
2012	35	36	44

Health Promotion and Public Communications:

Table 5: 2016 West Nile Virus and Lyme Disease Communications Campaign

Messaging	Media Type	# of items
Pesticide Notification	"Metroland" Newspapers (1/4 pg. b&w ads) Brock Citizen Oshawa/Whitby/Clarington This Week Pickering/Ajax News Advertiser Port Perry Star Uxbridge Times Journal "Independent" Newspapers (1/4 pg. b&w ads) Brooklin Town Crier Durham Citizen Orono Weekly Times Oshawa Express Scugog Standard Uxbridge Cosmos	8 ads - 205,750 impressions 6 ads - N/A impressions
"Fight the Bite" and Lyme Disease Advertisements	1/4 pg. colour ad in Uxbridge Leisure Guide (camp section – summer edition)	2 ads (one per message) - N/A impressions
"Fight the Bite" and Lyme Disease bathroom posters	New Ad Media Classic 13"x17" bathroom stall posters from July 25 x 4 weeks Various restaurants throughout Durham Region Medical Clinics (Walmart) – in Whitby / Oshawa/Pickering/Ajax	11 posters - 28,000 impressions
"Fight the Bite" and Lyme Disease Mobile App	Mobile App ads for each message on The Weather Network from July 25 x 4 weeks	2 ads each - 188,859 impressions
"Fight the Bite" Web Advertisement	Leaderboard and Big Box, Metroland Media Group (durhamregion.com) (2 size variations, 4 week duration – July 25 x 4 weeks)	2 ads - 166,000 impressions in 4 weeks
"Let's Target Lyme Disease" Web Advertisement	Leaderboard and Big Box, Metroland Media Group (durhamregion.com) (2 size variations, 4 week duration - July to August)	83,333 impressions
"Fight the Bite" and Lyme Disease web ads	Parentsource.ca ads - Big box ad (300x300pixels) for "Fight the Bite" and skyscraper ad for Lyme Disease message from mid-July to mid-August	Big box and skyscraper web ads - N/A impressions

Messaging	Media Type	# of items
“Fight the Bite” and Lyme Disease digital ads	Medical wait room digital LCD screen ads in Oshawa, Whitby, Ajax, Pickering and Uxbridge from mid-July to mid-August	30-60 second digital ads x 13 locations across Durham - 57,476 impressions
“Fight the Bite” Banner Bug Display	Community Events Regional Headquarters (5 days in each of 4 months – May, June, July, August)	20 display days - N/A impressions
“Let’s Target Lyme Disease” Banner Bug Display	Community Events Regional Headquarters (5 days in each of 4 months – May, June, July, August)	20 display days - N/A impressions
“Fight the Bite” Health Promotion Materials	Community Information Regional Headquarters, Environmental Health Week (5 days) Durham District School Board Safety Day (1 day) Uxbridge Fair (1 day) Port Perry Fall Fair (2 days) Orono Fair (2 days)	Distribution of >2,000 promotional items over 11 display days - N/A impressions

Total trackable impressions: 729,418 (West Nile – 364,709; Lyme 364,709)

Response to Public Inquiries - Environmental Help Line:

Summary:

In 2016, the total number of public inquiries regarding vector-borne diseases was similar to that seen in 2015 and 2014.

For the first time in 2016 there were calls to the Help Line regarding Zika virus and Zika virus testing. An inquiry category was added to track these calls.

In 2012, an inquiry category was added to track public concerns related to ticks and LD. The number of inquiries related to ticks and LD increased dramatically from 12 in 2012 to **69** in 2016.

In 2009, DRHD announced the cessation of dead bird surveillance activities. This led to a marked decrease in the number of WNV calls received during 2009 and 2010. Since 2010, any inquiries related to dead birds have been tracked under the “General Information” category.

Table 6: 2016 Environmental Help Line Inquiries – Vector-borne Diseases

Topic	**# Telephone Calls**
General information*	14
Stagnant Water	25
Promotional Material Provided+	0
Referrals+	3
LD / Tick Inquiries & Complaints**	69
Zika Virus Inquiries	4
Total	**115**

Table 7: 2015 Environmental Help Line Inquiries – Vector-borne Diseases

Topic	**# Telephone Calls**
General information*	26
Stagnant Water	27
Promotional Material Provided+	1
Referrals+	0
LD / Tick Inquiries & Complaints**	56
Total	**110**

Table 8: 2014 Environmental Help Line Inquiries – Vector-borne Diseases

Topic	**# Telephone Calls**
General information*	22
Stagnant Water	80
Promotional Material Provided+	0
Referrals+	1
LD / Tick Inquiries & Complaints**	14
Total	**117**

Table 9: 2013 Environmental Help Line Inquiries – Vector-borne Diseases

Topic	**# Telephone Calls**
General information*	44
Stagnant Water	27
Promotional Material Provided+	0
Referrals+	4
LD / Tick Inquiries & Complaints**	7
Total	**82**

Table 10: 2012 Environmental Help Line Inquiries – Vector-borne Diseases

Topic	**# Telephone Calls**
General information*	107
Stagnant Water	79
Promotional Material Provided+	4
Referrals+	23
LD / Tick Inquiries & Complaints**	12
Total	**225**

Ω *Note: In 2016, a new category, "Zika Virus Inquires" was created to track calls from the public and physicians related to Zika virus.*

** *Note: In 2012, a new category, "LD / Tick Inquiries and Complaints" was created to track those services /activities related to Lyme disease transmission*

+ *Note: As of 2011, two new categories, "Promotional Materials Provided" and "Referrals" were created to track these services*

* *Note: In 2009 the public were advised, via voicemail, media, and our website, that DRHD had discontinued its dead bird surveillance and collection program. As a result, inquiries relating to "Dead Bird Information" and "Dead Bird Sightings" dropped off substantially. Since 2010, any such inquiries have been incorporated under the heading "General Information".*

Eastern Equine Encephalitis (EEE)

Overview:

Like WNV, the virus that causes EEE is spread by the bite of infected mosquitoes. EEE is maintained in nature in a cycle between *Culiseta melanura* mosquitoes and avian (bird) hosts in freshwater, hardwood swamps. The United States Department of Agriculture (USDA) reports that EEEV has been isolated from at least 27 different mosquito species in the USA.

While *Cs. melanura* is the primary vector for EEEV it is not an important vector with regards to transmission of EEEV to humans because it feeds almost exclusively on birds. Rather, “bridge vectors” (i.e., mosquitoes that feed on both birds and mammals), and in particular some *Aedes*, *Coquilletidia,* and *Culex* species, are responsible for transmission of EEEV to humans.

EEEV can cause serious infection in horses with case fatality rates ranging from 50-90% in symptomatic animals. Equine cases of EEE have been reported throughout North America, particularly in Eastern Canada, in a number of US states, and in Mexico. Fortunately, an EEEV vaccine is available for horses. Emus and ostriches are also highly susceptible to EEEV infection.

While most humans infected with EEEV will remain asymptomatic, serious infections, involving encephalitis (inflammation of the lining of the brain) may occur. Severe symptoms can include sudden onset of headache, high fever, chills, and vomiting, followed by disorientation, seizures, and coma. Human case fatality rates range from 30-70%, and survivors often suffer long-term neurological effects.

From 2011 to 2013, the MOHLTC asked PHUs to conduct increased surveillance for EEEV in response to the increase in viral activity in mosquitoes, birds, horses and humans in several US states and the province of Quebec in 2010. Enhanced surveillance for EEEV was discontinued in 2014 as there was found to be negligible EEEV activity in the vector species tested.

Surveillance Results:

Summary:

In response to an increase in EEEV activity in mosquitoes, birds, horses, and humans in several US states and the province of Quebec between 2008 and 2010, the MOHLTC asked PHUs to conduct increased surveillance for EEEV and they introduced a new order of preference for viral testing of adult mosquitoes in 2011. DRHD implemented the requested viral testing preferences in 2011, 2012, and 2013 (see above).

No EEEV-positive mosquitoes were identified in Durham Region during any of the 2011, 2012, or 2013 surveillance seasons and, despite increased surveillance, only 1 EEEV-positive mosquito pool was identified in Ontario within that period (a single positive pool of *Coquillettidia perturbans* in Eastern Ontario in 2013)[+].

No *Culiseta melanura* mosquitoes and **0** EEEV-positive mosquito pools were identified from any of the 199 adult mosquito traps set in 2016.

No cases of equine EEE were reported in Durham Region between 2009 and 2016.

For Ontario, OMAFRA reported **0** cases of equine neurological disease in 2016. In comparison, there were 5 equine cases reported in 2015 and 24 in 2014 [¥].

In the USA, for 2016, the USDA reported **112** equine cases of EEE[∞]. US equine EEE case statistics are of concern in Ontario because many of the equine cases reported in recent years have occurred in bordering states such as Michigan and New York.

[+] *Source: Public Health Ontario, Eastern Equine Encephalitis Virus - History and Enhanced Surveillance in Ontario, 2014, link: https://www.publichealthontario.ca/en/eRepository/Eastern_Equine_Encephalitis_Virus_Report_2014.pdf*

[¥] Source: Ontario Ministry of Agriculture, Food, and Rural Affairs - Equine Neurological Disease Surveillance 2016. Data last updated October 5, 2016, link: *http://www.omafra.gov.on.ca/english/livestock/horses/facts/nhd_surv2016.htm*

[∞] *Source: United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) - 2016 Equine Case Reports of Eastern Equine Encephalitis. Data last updated January 03, 2017, link: https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/2016_eee_report.pdf*

Table 11: Summary of Equine Cases of EEE - Ontario and USA (2012-2016)

Year	# Equine Cases of EEE Reported in Ontario (OMAFRA)	# Equine Cases of EEE Reported in the USA (USDA)
2016	0	115
2015	5	68
2014	24	133
2013	1	179
2012	0	209

Enhanced Adult Mosquito Surveillance (2011-2013)

2013

mosquito pools tested for EEEV: 128

EEE-positive mosquito pools detected: 0

2012

mosquito pools tested for EEEV: 230

EEE-positive mosquito pools detected: 0

2011

mosquito pools tested for EEEV: 337

EEE-positive mosquito pools detected: 0

Equine Surveillance (2012-2016):

2016

equine EEE cases reported in Durham Region: **0**

equine EEE cases reported in Ontario: **0**

2015

equine EEE cases reported in Durham Region: 0

equine EEE cases reported in Ontario: 5

2014

equine EEE cases reported in Durham Region: 0

equine EEE cases reported in Ontario: 24

2013

equine EEE cases reported in Durham Region: 0

equine EEE cases reported in Ontario: 1

2012

equine EEE cases reported in Durham Region: 0

equine EEE cases reported in Ontario: 0

Note: Durham Region has had one equine case of EEE reported in 2008.

Human Case Surveillance

2016

No human cases of EEE were reported in Durham Region

2015

No human cases of EEE were reported in Durham Region

2014

No human cases of EEE were reported in Durham Region

2013

No human cases of EEE were reported in Durham Region

2012

No human cases of EEE were reported in Durham Region

Note: To date, there has never been a human case of EEE reported in Ontario

Lyme Disease (LD)

Overview:

LD is an infection caused by a spirochete of the genus *Borrelia*. Worldwide, there are several species of *Borrelia* that can cause disease. However, to date in Ontario, the only species of concern is *Borrelia burgdorferi.* The infection is transmitted to humans via the bite of an infected tick. In Ontario, *Ixodes scapularis* (the blacklegged tick / deer tick) is the primary vector of LD.

LD is the most common vector-borne disease in North America, and, in 2010, it became a nationally reportable disease in Canada. PHAC has stated that there is a low risk of encountering ticks infected with the LD agent in most of Canada although the risk is increasing in eastern Canada. The risk for exposure to the disease is highest in regions where the ticks that transmit LD are known to be established. However, surveillance data indicates that small numbers of blacklegged ticks can be introduced into widely separated areas of Canada by migratory birds, posing some risk that individuals in other areas may also be exposed to infected ticks.

Passive Tick Surveillance

DRHD accepts tick specimens, submitted by members of the public or health care providers, that have been found and/or feeding on human hosts. These specimens are sent for identification by the PHO Laboratory. If they are identified as *Ixodes scapularis* ("blacklegged"/"deer") ticks, they are then forwarded to the National Microbiology Laboratory (NML) in Winnipeg to determine if they are carrying *Borrelia burgdorferi,* the bacterium that causes Lyme disease.

The number of ticks submitted annually to DRHD has increased steadily between 2012 and 2016. A summary of passive and active tick surveillance results, from 2012 to 2016 is included in Table 6.

Active Tick Surveillance

Active surveillance for blacklegged ticks ("tick dragging") has been conducted, in likely tick habitats within Durham Region, since 2010. For the first time, in the fall of 2014, blacklegged ticks, positive for *Borrelia burgdorferi*, were found during active surveillance activities. These findings resulted in a joint media release being issued by DRHD, Toronto Public Health, and York Region Community and Health Services, warning the public to take precautions against ticks when spending time outdoors in and around wooded areas. In addition, an updated *FAX About Lyme Disease* was distributed to all Durham Region health care providers advising them to consider LD as a possible

diagnosis for patients with related symptoms and/or whose lifestyle and travel histories may have resulted in them being exposed to ticks.

More LD-positive ticks were found in Durham Region in 2015 and each year the number of established tick populations appears to be steadily increasing within the Region.

Although 8 blacklegged ticks were found during active surveillance at 3 different sites in Durham Region in 2016, none of those ticks were found to be positive for *Borrelia burgdorferi* or any other pathogens of concern.

PHO defines "estimated Lyme disease risk areas"***** as locations where blacklegged ticks have been identified or are known to occur and where humans have the potential to come into contact with infected ticks. In the fall of 2016, signage was posted at the entrances to the Lynde Shores Conservation Area and the Rouge Valley, warning the public that blacklegged tick populations have become established in these areas. Further signage will be provided as new "estimated Lyme disease risk areas" are identified.

***** Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Technical Report: Update on Lyme disease Prevention and Control, Second Edition, Toronto, ON: Queen's Printer for Ontario; 2016, link: *http://www.publichealthontario.ca/en/eRepository/Technical_report_update_on_Lyme_disease_prevention_and_control.pdf*

Human Case Surveillance

LD became a reportable disease in Ontario in 1988 and a nationally notifiable disease in 2010. Because of this, DRHD routinely conducts human LD case investigations whenever laboratory testing, ordered by physicians, is received and if results indicate that a patient has had a positive reaction to one or both tiers of LD testing. Confirmed and probable cases of LD are defined based on the patient's history of residence in or visit to a LD risk area plus a combination of clinical and laboratory evidence.

While the risk of contracting LD within Durham Region is currently low, the potential for infection is likely to increase subject to deer, small rodent, and bird migration patterns across the north shore of Lake Ontario. In addition, changing climatic conditions may contribute to an expansion of the distribution of ticks that carry LD.

In 2010, in an effort to increase public awareness about the risk of LD, DRHD developed a communication plan that included the provision of LD information on the Durham Region website and the development of an LD brochure and "Banner Bug" display. Since then, the annual communication campaign has expanded to include digital advertising in medical offices and malls, signage at golf courses and restaurants, and web-based ads via various media outlets.

From 2011 to 2013, DRHD staff distributed LD brochures to a number of target groups (i.e., school boards, horticultural societies, campers and hikers, etc.) as well as providing information and displays at a number of community events. The LD "Banner Bug" display was used at a number of community events and for LD presentations. An interactive LD trivia game was developed for use during presentations and at events to attempt to increase awareness amongst school-aged groups.

Between 2014 and 2016, LD information pamphlets were distributed to a number of target groups including all horticultural societies, all garden centres, all golf courses and all medical offices within Durham Region

Surveillance Results:

Passive Tick Surveillance:

Summary:

In 2016, **83** tick specimens were submitted to DRHD for identification and potential testing. **Fifty-seven** of the 83 specimens were identified as blacklegged ticks, while the other specimens were identified as follows: **13** *Dermacentor variabilis* ("dog tick"); **2** *Ixodes cookei* ("woodchuck / groundhog tick"); **2** *Amblyomma americanum* ("lone star tick"); **1** *Amblyomma maculatum* ("Gulf Coast tick"). Another 8 specimens were not ticks.

Thirty-nine of the 57 blacklegged ticks identified were reported to have been acquired locally in Durham Region. The other 18 were acquired from various areas outside Durham Region.

Four of the 57 blacklegged ticks identified were found to be positive for *Borrelia burgdorferi*, the agent responsible for LD. Of the 4 positive ticks, 1 was reported to have likely been acquired within Durham Region. The other 3 were reported to have been acquired elsewhere.

The number of ticks submitted annually to DRHD, for identification and potential testing, has increased seven-fold since 2011 (i.e. from 12 to 83 ticks).

2016

 # ticks submitted for identification and potential testing: 83

- Breakdown of tick identification results:
    - Blacklegged tick (*Ixodes scapularis)* **57**
    - Woodchuck tick (*Ixodes cookei*) **2**

- Dog tick (Dermacentor variabilis) **13**
- Lone star tick (*Amblyomma americanum*) **1**
- Other tick species **1**

ticks reported acquired as a result of travel outside of Durham Region: **32**

ticks reported to have been locally acquired: **51**

locally-acquired, blacklegged ticks: **39**

blacklegged ticks testing positive for *Borrelia burgdorferi*: **4**

of locally-acquired, blacklegged ticks testing positive for *B. burgdorferi*: **1**

2015

ticks submitted for identification and potential testing: 84

- Breakdown of tick identification results:
  - Blacklegged tick (*Ixodes scapularis)* 60
  - Woodchuck tick (*Ixodes cookei*) 5
  - Dog tick (Dermacentor variabilis) 17
  - Lone star tick (*Amblyomma americanum*) 2
  - Other tick species 0

ticks reported acquired as a result of travel outside of Durham Region: 30

ticks reported to have been locally acquired: 30

locally-acquired, blacklegged ticks: 30

blacklegged ticks testing positive for *Borrelia burgdorferi*: 5

of locally-acquired, blacklegged ticks testing positive for *B. burgdorferi*: 2

2014

ticks submitted for identification and potential testing: 35

- Breakdown of tick identification results:
  - Blacklegged tick (*Ixodes scapularis)* 18
  - Woodchuck tick (*Ixodes cookei*) 3
  - Dog tick (Dermacentor variabilis) 12
  - Other tick species 1

ticks reported acquired as a result of travel outside of Durham Region: 21

ticks reported to have been locally acquired: 14

locally-acquired, blacklegged ticks: 12

of locally-acquired, blacklegged ticks testing positive for *B. burgdorferi*: 0

2013

ticks submitted for identification and potential testing: 28

- Breakdown of tick identification results:
    - Blacklegged tick (*Ixodes scapularis)* 12
    - Woodchuck tick (*Ixodes cookei*) 2
    - Dog tick (Dermacentor variabilis) 8
    - Other tick species 6

ticks reported acquired as a result of travel outside of Durham Region: 20

ticks reported to have been locally acquired: 8

locally-acquired, blacklegged ticks: 5

of locally-acquired, blacklegged ticks testing positive for *B. burgdorferi*: 0

2012

ticks submitted for identification and potential testing: 23

- Breakdown of tick identification results:
    - Blacklegged tick (*Ixodes scapularis)* 8
    - Woodchuck tick (*Ixodes cookei)* 7
    - Dog tick (Dermacentor variabilis) 7
    - Lone Star tick (Amblyomma americanum) 1
- # blacklegged ticks testing positive for *B. burgdorferi* / LD: 0 of 8

Active Tick Surveillance:

Summary:

Active tick surveillance ("tick dragging") has been conducted in Durham Region each year since 2010.

No ticks were found during active surveillance activities until the fall of 2013 when 19 blacklegged ticks were found in south Whitby.

In the fall of 2014, 7 blacklegged ticks were found during active tick surveillance at 3 different sites as follows: 1 tick at Lynde Shores Conservation Area in south Whitby, 4 ticks in the Rouge Valley in south Pickering, and 2 ticks on the Seaton Hiking Trail in north Pickering. Three of the 4 blacklegged ticks found in the Rouge Valley (Pickering) subsequently tested positive for *Borrelia burgdorferi*. This was the first time that any blacklegged ticks, found within Durham Region, have tested positive for the bacteria that causes Lyme disease.

During active surveillance, conducted in October of 2015, 12 ticks were found as follows: 10 ticks in the Rouge Valley, south Pickering, and 2 ticks at Lynde Shores Conservation Area, south Whitby. No ticks were found at other surveillance locations. Four of the 10 ticks found in the Rouge Valley tested positive for *Borrelia burgdorferi*. The other 6 ticks from the Rouge Valley and the 2 ticks found at Lynde Shores Conservation Area all tested negative for the bacteria.

In the fall of 2016, **8** blacklegged ticks were found at **3** separate sites within Durham Region: in Durham Forest (Uxbridge), on the waterfront trail near the Darlington Nuclear Plant (Clarington), and in Darlington Provincial Park (Clarington). **None** of the ticks tested positive for *B. burgdorferi* bacteria or any other pathogens of concern. While active surveillance was conducted at a number of other sites, no ticks were found.

"Get Tick Smart" signs were posted at the entrances to the Rouge Valley (south Pickering) and Lynde Shores Conservation Area (south Whitby) in the fall of 2016, to warn the public that blacklegged tick populations have become established in these areas.

2016

ticks found through active tick surveillance in Durham Region: **8** at 3 separate sites

blacklegged ticks identified: **8**

LD-positive blacklegged ticks identified: **0**

2015

ticks found through active tick surveillance in Durham Region: 12 at 2 separate sites

blacklegged ticks identified: 12

LD-positive blacklegged ticks identified: 4 (all from the same site)

2014

ticks found through active tick surveillance in Durham Region: 7 at 3 separate sites

blacklegged ticks identified: 7

LD-positive blacklegged ticks identified: 3 (all from one of the 3 sites)

2013

ticks found through active tick surveillance in Durham Region: 19 at a single site

blacklegged ticks identified: 19

LD-positive blacklegged ticks identified: 0

2012

ticks found through active tick surveillance in Durham Region: 0

blacklegged ticks identified: 0

LD-positive blacklegged ticks identified: 0

Human Case Surveillance:

Summary:

16 confirmed and **8** probable human cases of LD were reported in Durham in 2016 (as of January 24, 2017).

2 of the 16 confirmed and **3** of the 8 probable cases reported that their tick exposures most likely occurred within Durham Region.

Another **2** of the confirmed cases were positive for one of the European strains of *Borrelia* bacteria.

Between 2011 and 2016, a total of **45** confirmed human cases of LD were reported in Durham Region. In addition, **23** probable human cases were reported in that period.

The annual number of human cases of LD has increased steadily since 2012.

2016

human cases of LD reported In Durham Region: 16 confirmed, 8 probable (as of January 24, 2017)

2015

human cases of LD reported In Durham Region: 11 confirmed, 4 probable

2014

human cases of LD reported In Durham Region: 9 confirmed, 3 probable

2013

human cases of LD reported in Durham Region: 6 confirmed, 5 probable

2012

human cases of LD reported in Durham Region: 2 confirmed

Table 12.1: Passive Tick Surveillance Results – Durham Region (2012-2016)

Year	# Ticks Submitted	# of Blacklegged Ticks Identified	# of LD-positive Blacklegged Ticks Acquired Within Durham	# of LD-positive Blacklegged Ticks Acquired Outside Durham
2016	**83**	**57**	**1**	**3**
2015	84	60	2	3
2014	35	18	0	2
2013	28	12	0	2
2012	23	8	0	0

Table 12.2: Active Tick Surveillance Results – Durham Region (2012-2016)

Year	# of Ticks Submitted	# of Blacklegged Ticks Identified	# of LD-positive Blacklegged Ticks Identified
2016	**8**	**8**	**0**
2015	12[£]	12	4[ŧ]
2014	7[∞]	7	3[≠]
2013	19	19	0
2012	0	0	0

[£] *Note: the 12 ticks were found at 2 separate sites within Durham Region*

[ŧ] *Note: all 4 LD-positive ticks were found at the same site within Durham Region*

[∞] *Note: the 7 ticks were found at 3 separate sites within Durham Region*

[≠] *Note: all 3 LD-positive ticks were found at the same site within Durham Region*

Table 13: Summary of Reported Human Cases of Lyme Disease – Durham Region (2012-2016)

Year	# of Confirmed Human Cases Reported	# of Probable Human Cases Reported
2016	**16**	**8**
2015	11	4
2014	9	3
2013	6	5
2012	2	0

Other Vector-Borne Diseases of Concern

Malaria

Overview:

Malaria is an acute, flu-like illness caused by one of four species of parasite of the genus *Plasmodium*: *Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale,* and *Plasmodium malariae.*

Malaria is most commonly transmitted to humans through the bite of an infected female *Anopheles* mosquito. When an *Anopheles* mosquito ingests blood from a malaria-infected person, malaria parasites develop in the mosquito and migrate into the mosquito's salivary glands. When the infected mosquito bites another human, malaria can be transmitted to that individual. In rare instances the malaria parasite can also be transmitted by transfusion with infected blood, by shared needle use, or by a mother to her unborn child.

Symptoms of malaria include fever and flu-like symptoms such as headache, nausea, vomiting, muscle pain or spasms, chills, and malaise. Acute infection can cause enlargement of the spleen and make the liver tender.

The severity of the illness varies depending on which species of the malaria parasite is responsible for the infection. Of the 4 parasite species, *P. falciparum* is responsible for the most serious illness, including seizures, coma, kidney failure, and respiratory failure, which can lead to death.

If identified early and treated appropriately, almost all malaria cases can be completely cured. However, even short delays in diagnosis can make treatment more difficult and less successful.

Malaria is endemic (i.e., constantly occurring) in most of Sub-Saharan Africa and New Guinea; in large areas of South Asia, Southeast Asia, Oceania, Haiti, Central and South America; and in parts of Mexico, the Dominican Republic, North Africa, and the Middle East.

According to PHAC, there are roughly 400 reported travel-related cases of malaria in Canada each year, and it is estimated that up to 50% of cases are never reported. Measures to prevent malaria infection include personal precautions to avoid mosquito bites, and the use of effective anti-malarial medications. No vaccine is available.

Surveillance Results:

2016

Six confirmed cases of malaria were reported in Durham Region in 2016.

Plasmodium falciparum was identified as the agent responsible in 4 of the 6 cases while *P. vivax* and *P. ovale* were each responsible for 1 of the other 2 cases.

Travel to or residence in an endemic country was a known risk factor in all 6 cases.

2015

Six confirmed cases of malaria were reported in Durham Region in 2015

Plasmodium falciparum was identified as the agent responsible in 5 of the 6 cases. The specific disease agent was not identified in the 6th case.

Travel to or residence in an endemic country was a known risk factor in the 5 cases. No details were available with respect to travel /residence or exposure in the other case.

2014

Nine confirmed cases of malaria were reported in Durham Region in 2014

Plasmodium falciparum was identified as the agent responsible in 2 of the cases, and P. vivax in another 3 cases. The responsible agent was not identified in 4 of the cases.

Travel to or residence in an endemic country was a known risk factor in 3 of the cases. There was no information available with respect to travel /residence in the other 6 cases.

2013

Durham Region had 12 confirmed cases of malaria reported during 2013

Plasmodium falciparum was identified as the agent responsible for 6 of the cases while *Plasmodium vivax* accounted for the other 6.

In all but 2 cases, travel to or residence in an endemic country was a known risk factor. No information with respect to travel/residence was available for the other 2 cases.

2012

Seven confirmed human cases of malaria were reported in Durham Region as follows: 4 cases of *Plasmodium falciparum,* and 3 cases of *Plasmodium vivax.*

Four of the 7 cases had “travel to endemic country” as a risk factor, while no exposure details were available for the other 3 reported cases.

2011

Four human cases of malaria were reported in Durham Region as follows: 2 cases of *Plasmodium falciparum*, and 1 case each of *Plasmodium ovale*, and *Plasmodium vivax*

Details regarding exposure were not available for the two (2) *Plasmodium falciparum* cases. The other two were reported to be related to travel outside of Canada.

Table 14: Summary of Human Cases of Malaria - Durham Region (2012-2016)

Year	# of Cases	# Cases with Travel or Residence in an Endemic Country as a Known Risk Factor	Responsible Organism
2016	**6**	**6**	**4 - P. falciparum / 1 - P. vivax / 1 - P. ovale**
2015	6	5	5 - P. falciparum / 1 - unspecified
2014	9	3	2 - P. falciparum / 3 - P. vivax / 4 - unspecified
2013	12	10	6 - P. falciparum / 6 - P. vivax
2012	7	4	4 - P. falciparum / 4 - P. vivax

Plague

Overview:

Plague is an infectious disease caused by the bacteria *Yersinia pestis.* It can affect both animals and humans. Plague is transmitted between animals and humans by the bite of infected fleas, direct contact with infected rodents, inhalation, and rarely, ingestion of infective materials. While there have been many outbreaks of plague in human history, outbreaks are rare today.

There are three different types of illness that the plague infection can cause. They are bubonic, pneumonic, and septicemic plague. All forms of plague begin with flu-like symptoms including fever, chills, muscle pain, weakness, and headache. Symptoms can also include nausea, vomiting, diarrhea, and abdominal pain.

Bubonic plague is the most common form of the plague. Infection results from the bite of an infected flea that has fed on an infected rodent, such as a rat. Bubonic plague infection affects the lymph nodes, causing swelling and pain.

Pneumonic plague is the least common but most deadly form of plague. It can be spread through airborne droplets released through coughs or sneezes, or contact with infected body fluids. It can also be spread through contact with clothing, or bed linens that have been contaminated with infected body fluids.

Septicemic plague can result from either bubonic or pneumonic plague.

Rapid diagnosis and treatment of plague is essential to reduce complications and fatality. Effective treatment methods enable almost all patients to be cured if diagnosed in time. Several antibiotics can effectively treat plague along with supportive therapy. While there is a vaccine to protect people who are at high risk of exposure to the disease, the vaccine is not available for general public use.

Because plague is usually transmitted from animals to humans via rodents or their fleas, in areas where plague is established in wildlife populations, people should avoid contact with the habitats where infected rodents or fleas might reside.

Surveillance Results:

2016

No human cases of plague reported in Durham Region

2015

No human cases of plague reported in Durham Region

2014

No human cases of plague reported in Durham Region

2013

No human cases of plague reported in Durham Region

2012

No human cases of plague reported in Durham Region

Note: Human cases of plague are very rare in Canada. The last reported case occurred in 1939.

Tularemia

Overview:

Tularemia is an infection that is caused by the bacteria *Francisella tularensis.* It is endemic throughout North America, and many parts of Europe as well as the Soviet Union, China, and Japan.

The reservoirs for tularemia in North America include rodents, rabbits, muskrats, and beavers. The organism can also be carried by various hard ticks. Tularemia can be spread from animals to humans, although this is not common. Human infection usually results from direct contact with infected live animals, animal hides, or uncooked meat, but may also occur as a result of a tick bite, or inhalation of contaminated dust from animal environments (e.g., cages, barns, etc.).

The clinical signs of tularemia infection in animals are not always obvious, and will vary depending on the susceptibility of the animal species to the bacteria, the virulence of the bacteria, and the source of the infection

There are two types of tularemia: Type A and Type B. Type A tularemia usually causes more serious illness in people.

The onset of disease in humans is usually sudden, with cases experiencing flu-like symptoms including: high fever, chills, general body aches, headache, and nausea. An ulcer often develops on the skin or mouth at the site of introduction of the organism, and there may be swelling and pain in the lymph glands.

Symptoms of infection vary according to the means by which the *F. tularensis* bacterium is introduced into the body. Ingestion of the organism can produce pharyngitis, abdominal pain, diarrhea, and vomiting, while inhalation can result in pneumonia, and introduction into the eyes can result in painful and productive conjunctivitis. Symptoms usually appear three to five days after exposure to the bacteria, but can take up to 14 days to appear.

While both types of tularemia can usually be successfully treated with antibiotics, in rare cases tularemia can be fatal.

Surveillance Results:

2016

No human cases of tularemia reported in Durham Region

2015

No human cases of tularemia reported in Durham Region

2014

No human cases of tularemia reported in Durham Region

2013

No human cases of tularemia reported in Durham Region

2012

No human cases of tularemia reported in Durham Region

Yellow Fever

Overview:

Yellow fever is caused by a virus that is transmitted to humans by the bite of an infected mosquito. Yellow fever derives its name from the yellowing of the skin and eyes (jaundice) that occurs when the virus attacks the liver.

The primary vector of yellow fever virus is *Aedes aegypti* but other *Aedes* species in Africa and the *Haemagogus* species in South America also play a role in transmission. Non-human primates (e.g. monkeys, great apes) can also be infected with the yellow fever virus, and these animals serve as a reservoir for the virus in rural and jungle areas.

Yellow fever is endemic (always present) in many tropical areas of South America and Africa. Canadians travelling to endemic areas may be at risk of contracting the virus.

Symptoms of yellow fever usually take 3-6 days to appear in infected individuals, and may include sudden onset of fever, headache, joint pain, loss of appetite, abdominal pain, vomiting, and dehydration. Most patients recover after this stage. However, in severe cases, the disease can lead to shock, internal bleeding, jaundice (yellowing of the skin and eyes), and organ failure. This occurs in about 15% of patients.

The case-fatality rate for those who develop severe yellow fever disease is 20-50%. Once symptoms develop there is no specific treatment, and the only option is supportive care.

A yellow fever vaccine is available to prevent infection. First time recipients of the vaccine must be vaccinated at least 10 days before travelling to endemic areas for the vaccine to be effective. In addition to vaccination, personal protective measures against mosquitoes are recommended for persons travelling to endemic regions.

PHAC indicates that mosquito control has played a major role in preventing transmission of yellow fever in North America and Europe.

Surveillance Results:

2016

No human cases of yellow fever reported in Durham Region.

2015

No human cases of yellow fever reported in Durham Region.

2014

One human case of yellow fever reported in Durham Region. This case was reported to have been related to travel to Guyana.

2013

No human cases of yellow fever reported in Durham Region

2012

No human cases of yellow fever reported in Durham Region

Zika Virus

Overview:

Zika virus was first identified in humans in 1952 in the Zika forest of Uganda. Since then, outbreaks of disease have been recorded in Africa, Asia, the Americas and the Pacific.

Zika virus is generally transmitted to humans via the bite of an infected mosquito. The vectors of Zika virus are *Aedes* mosquitoes (i.e., *Ae. aegypti* and *Ae. albopictus*). These mosquitoes also transmit the dengue and chikungunya viruses.

In addition to the primary means of transmission, it is now known that the Zika virus can be transmitted sexually from one partner to another via semen or vaginal fluids and that a pregnant woman infected with Zika virus can transmit the virus to her fetus during pregnancy or at the time of birth resulting in the potential for severe birth defects. Zika can also potentially be transmitted via blood transfusions, and via laboratory and healthcare setting exposures.

Most people infected with Zika virus experience mild symptoms including: fever, rash, joint pain, conjunctivitis, muscle pain, and headache. Some have no symptoms. However, during a large outbreak of Zika virus that was identified in Brazil in the spring of 2015, researchers identified an association between Zika virus infection and Guillain-Barré syndrome. In addition, it was found that Zika virus infection during pregnancy can cause microcephaly and other severe birth defects. Microcephaly is a condition in which a baby has a head size much smaller compared to other babies of the same age and

sex. Head size is an important measure of a child's brain growth. Researchers are still attempting to determine the full range of potential health problems Zika virus may cause.

There is no vaccine for Zika virus so the best way to prevent Zika virus transmission is to protect against mosquito bites using appropriate clothing, insect repellents, and barriers such as window screens and mosquito netting. Sexual transmission can be prevented with condom use or abstinence from sex after potential exposures to the virus.

Currently the risk of acquiring Zika virus within Canada is extremely low as it is thought that the Canadian climate is not conducive to the survival of and proliferation of *Aedes aegypti* and *Aedes albopictus* mosquitoes. However, PHAC is planning to enhance mosquito surveillance within Canada in future to allow for the detection of species that could transmit the virus.

Surveillance Results:

As of January 12, 2017 PHAC has received reports of a total **439 travel-related cases** and **3 sexually transmitted cases** of Zika virus in Canada. **Twenty-three pregnancies** have been reported among Zika infected women with **fetal and/or newborn anomalies observed in 2 instances**.[≠]

[≠] Source: Public Health Agency of Canada (PHAC), Surveillance of Zika Virus, link: *http://www.healthycanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/zika-virus/surveillance-eng.php*

Program Evaluation

Durham Region - Rapid Risk Factor Surveillance System (RRFSS) Results:

The RRFSS is an ongoing telephone survey of adults aged 18 years and older, conducted by the Institute for Social Research at York University, on behalf of DRHD and other participating Ontario PHUs. Since 2001, a sample of at least 100 Durham Region residents has been surveyed on a monthly basis regarding knowledge, attitudes and risk behaviours of importance to public health. Questions related to WNV were included in the Durham Region RRFSS survey from 2002 to 2005, and in 2008, 2010, 2012, 2014, and 2016. Data collection for WNV did not take place in 2006, 2007, 2009, 2011, 2013 or 2015. In 2011, new modules were added to RRFSS to measure awareness and perceived risk of LD and the use of personal protective measures. The LD questions were included in the Durham Region RRFSS survey in 2011, 2012, 2013, and 2015. The RRFSS results provide data for evaluation of DRHD initiatives to increase public awareness and encourage behaviours that reduce the risk of contracting West Nile virus and Lyme disease.

Data Notes:

95% Confidence Interval (CI): Percentages are expressed in the form of the point estimate ± the 95% CI around the estimate. The true or actual percentage falls within the range of values, 95 out of 100 times. A wide CI reflects a large amount of variability or imprecision. Usually, CIs are narrower when a large number of residents are surveyed. In bar charts, the 95% CI is represented by an error bar (I) at the top of each bar.

Significant Difference refers to a difference between two estimated percentages that is not likely due to chance. If the 95% confidence intervals of two estimates do not overlap, there is considered to be a significant difference between the estimates.

Household Weights are applied when calculating the estimates to adjust for the unequal probability of respondent selection based on the number of adults in the household.

WNV

During the summer of 2016 (May-August), over 615 Durham Region adults aged 18 and older were surveyed regarding awareness of WNV and use of personal and household protective measures to reduce exposure to mosquitoes and mosquito bites.

WNV Awareness

In 2016, **97%** (±2%) of adults in Durham Region had heard of WNV and **83%** (±4%) knew that WNV is passed on to people by mosquitoes. In 2014, when these questions were last asked, 98% (±1%) had heard of WNV and 89% (±3%) knew that mosquitoes were the means of transmission. This slight decrease since 2014 does not represent a significant change in awareness.

WNV Personal Protective Behaviours - Use of Clothing & DEET

2016

During the summer of 2016, **37%** (±5%) of Durham Region residents reported covering up with long sleeves, pants, and socks all or most of the time to protect themselves from being bitten by mosquitoes and about **13%** (±4%) of residents used a DEET-based insect repellant all or most of the time.

Main Reasons for Not Covering Up More Often (among residents who did not cover-up all or most of the time), Durham Region, May - August 2016

Table 15: Response Rate for Not Covering Up More Often

Response	Rate
Not Enough Mosquitoes Out	39% (±6%)
Not Worried About Being Bitten by Mosquitoes	23% (±6%)
Didn’t Go Where Mosquitoes Are	17% (±5%)
Too Hot to Cover Up	16% (±5%)
Other Reasons	5%* (±2%)

Main Reason for Not Using DEET More Often (among residents who did not use DEET all or most of the time), Durham Region, May - August 2016

Table 16: Response Rate for Not Using DEET

Response	**Rate**
Not Enough Mosquitoes Out	36% (±5%)
Not Worried About Being Bitten by Mosquitoes	15% (±4%)
Didn’t Go Where Mosquitoes Are	22% (±5%)
Don’t Like Using Chemicals Like DEET	21% (±5%)
Other Reasons	6%* (±3%)

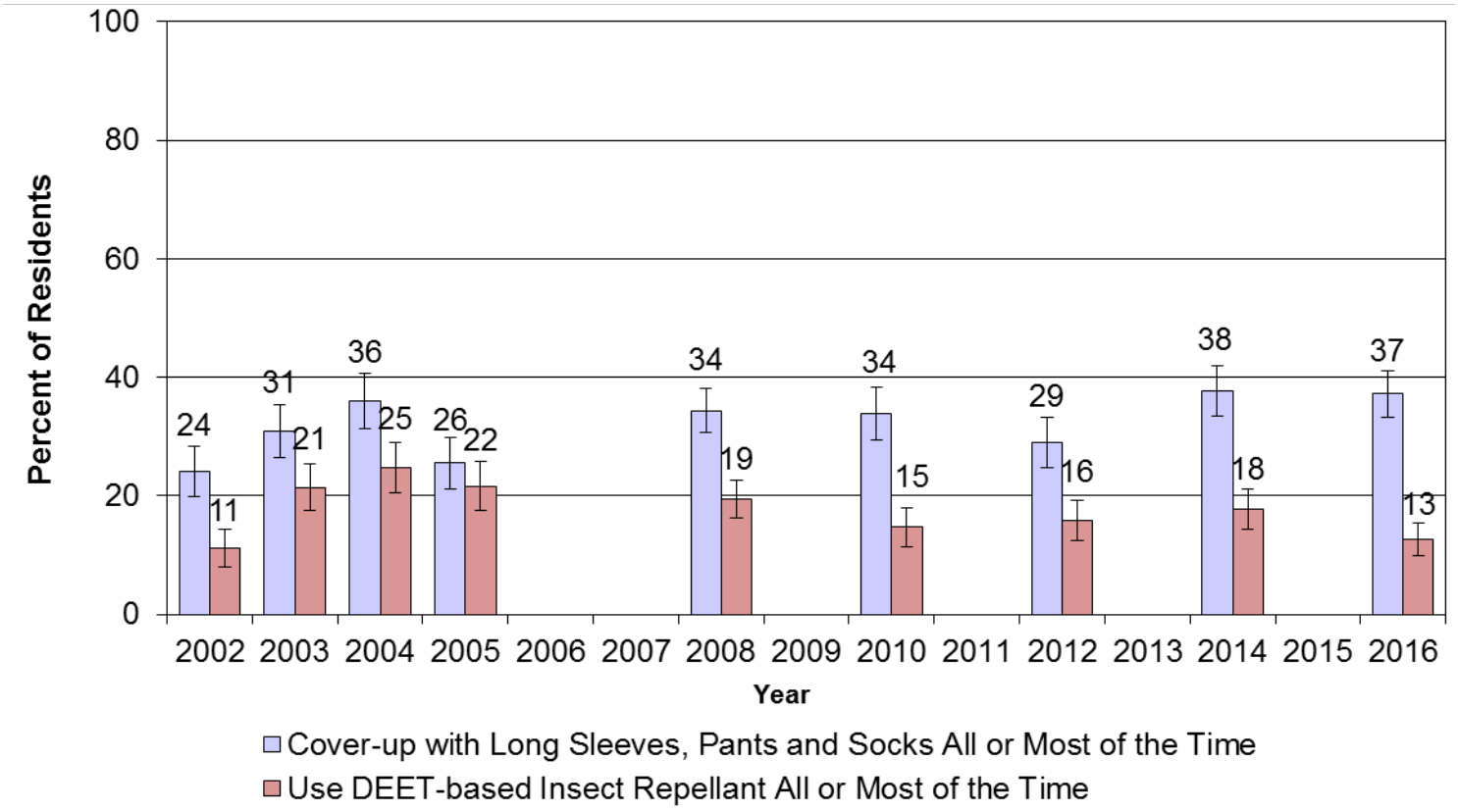
**Interpret with caution due to high variability*

Trend 2002 - 2016

The percentage of residents who cover-up with long sleeves, pants, and socks all or most of the time to protect themselves from being bitten by mosquitoes was similar in 2016 (37% ±5%) compared to 2014 (38% ±4%). There have been regular annual fluctuations over the more than ten years of data collection, such as the significant increase between 2012 (29% ±4%) to 2014 (38% ±4%).

Use of DEET-based insect repellant increased from 11% (±3%) in 2002 to a peak of 25% (±4%) in 2004. From 2008 onwards, it has since declined; ranging between 13% and 19%.

Graph 1: WNV Personal Protective Behaviours, Adults (18+), Durham Region, 2002-2016



WNV Household Protective Behaviours - Removal of Standing Water & Use of Window/Door Screens

2016

During the summer of 2016, **92%** (±3%) of Durham Region households did not have containers outside where water collected and stayed for more than 7 days: 75% (±4%) did not have containers that collected water and 17% (±3%) reported having containers where water could collect but was not allowed to stay for more than 7 days at a time. Only 8% (±2%) of households reported having containers where water collected and stayed for more than 7 days.

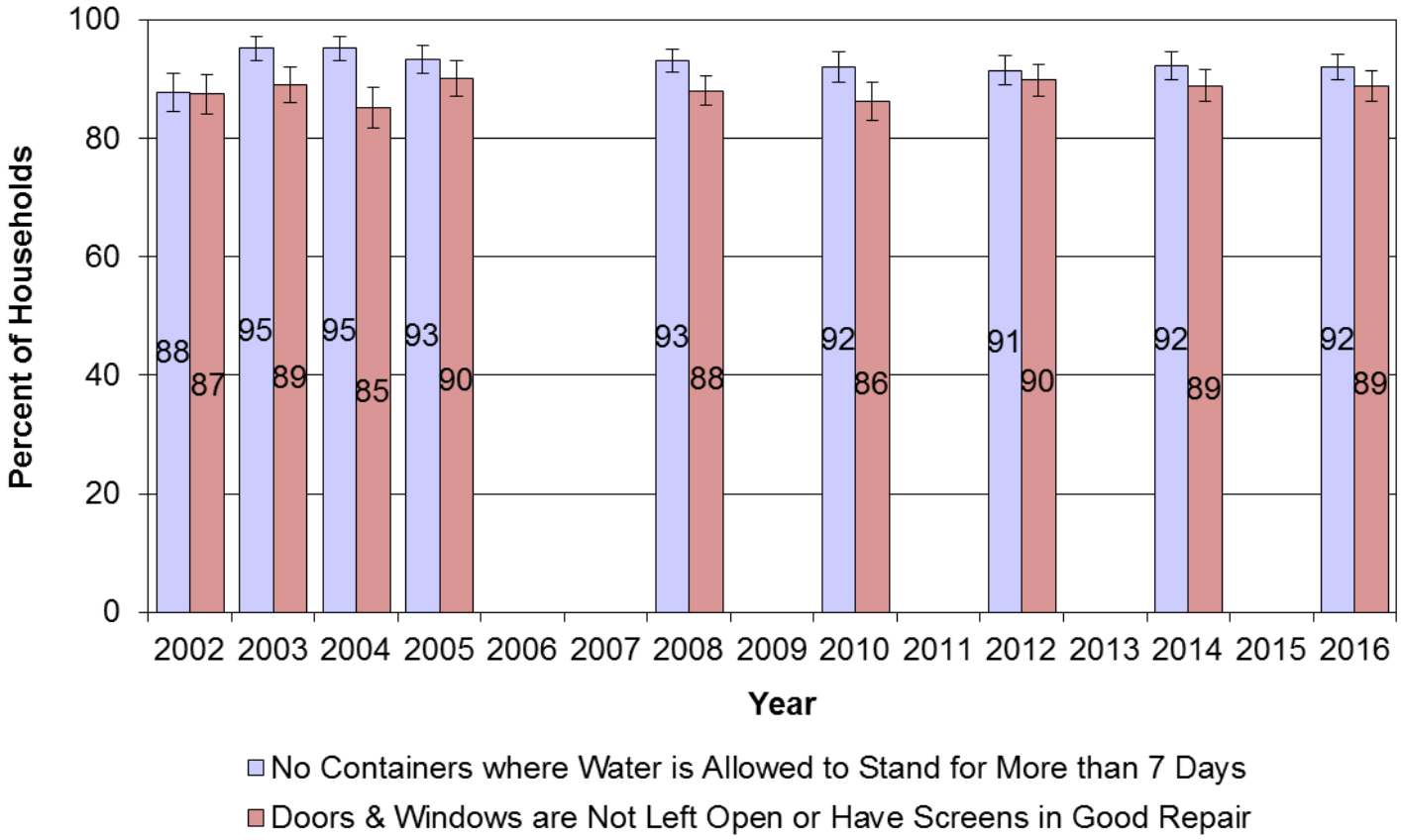
Most households (**89%** ±3%) had all door and window screens in good repair or did not leave doors and windows open: 67% (±4%) reported having screens with no holes or tears and 22% (±3%) did not leave doors and windows open. Ten per cent (10% ±2%) of households had screens in need of repair or had windows and doors without screens.

Trend 2002 - 2016

The percentage of households with no containers outside where water is allowed to collect and stand for more than 7 days increased significantly from 88% (±3%) in 2002 to 95% (±2%) in 2003 and 2004 and has since remained relatively steady ranging from about 91% to 93% of households.

The percentage of households with screens in good repair or where doors and windows are not left open has remained relatively steady since 2002 ranging from about 85% to 90% of households.

Graph 2: WNV Household Protective Behaviours, Durham Region, 2002-2016



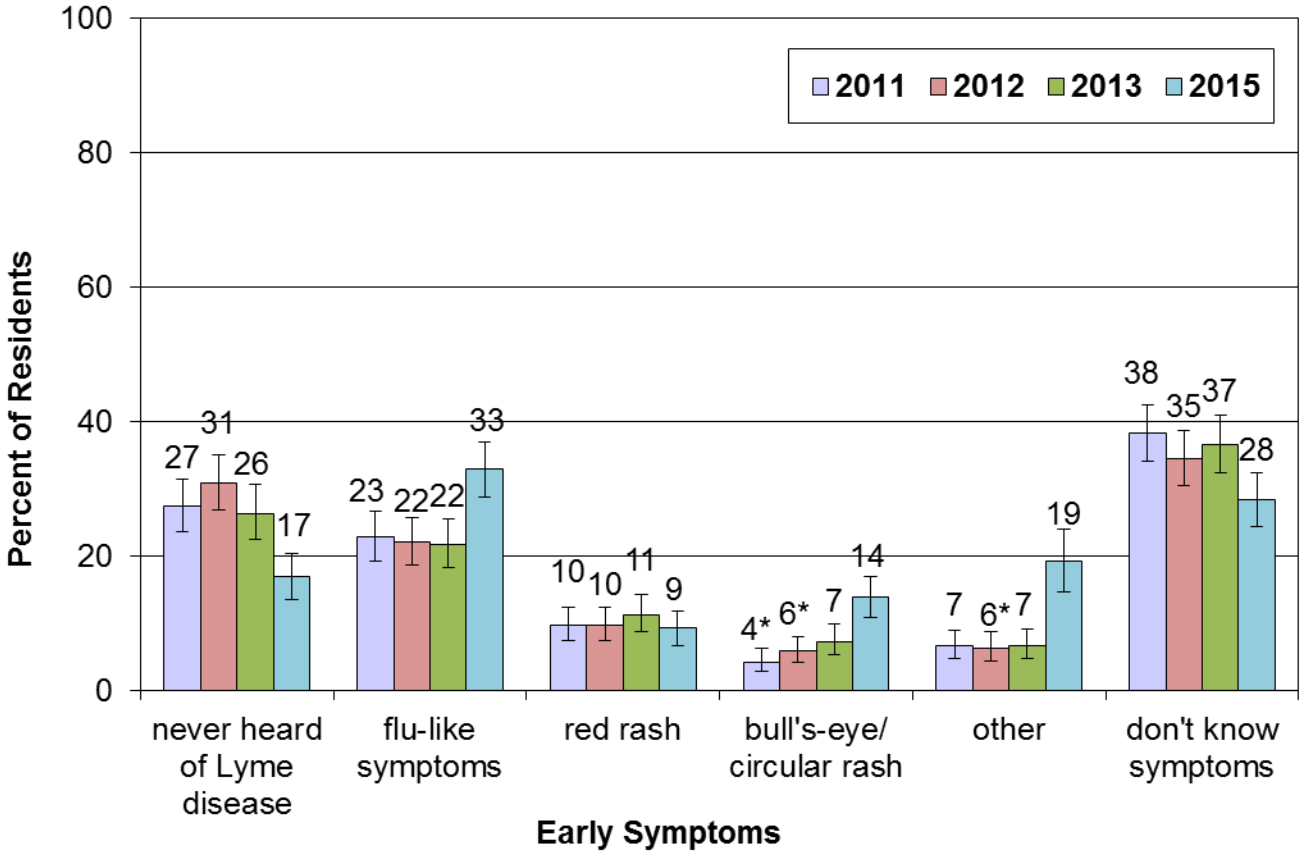
LD

During 2011, 2012, 2013, and 2015, approximately 600 Durham Region adults were surveyed each fall regarding their awareness and perceived risk of LD and their use of personal protective measures during the past summer to reduce exposure to ticks.

LD Awareness

In 2015, 83% (±4%) of adults in Durham Region had heard of LD and more than half (58% ±4%) knew that people get LD from ticks. These results are significantly higher compared to 2012 or 2013. Awareness of the early symptoms of LD varied: 33% (±4%) mentioned general flu-like symptoms including fatigue, fever or chills, muscle or joint pain, or swollen lymph nodes, 9% (±3%) mentioned a red rash and only 14% (±3%) specifically described a circular “bull’s-eye” rash. The number of residents who were able to identify flu-like symptoms and a bull’s eye rash has significantly increased from 2013 compared to 2015. There was also a statistically significant decrease in the number of residents who haven’t heard of LD.

Graph 3: Awareness of Early Symptoms of Lyme Disease, Adults (18+), Durham Region, 2011-2013, 2015



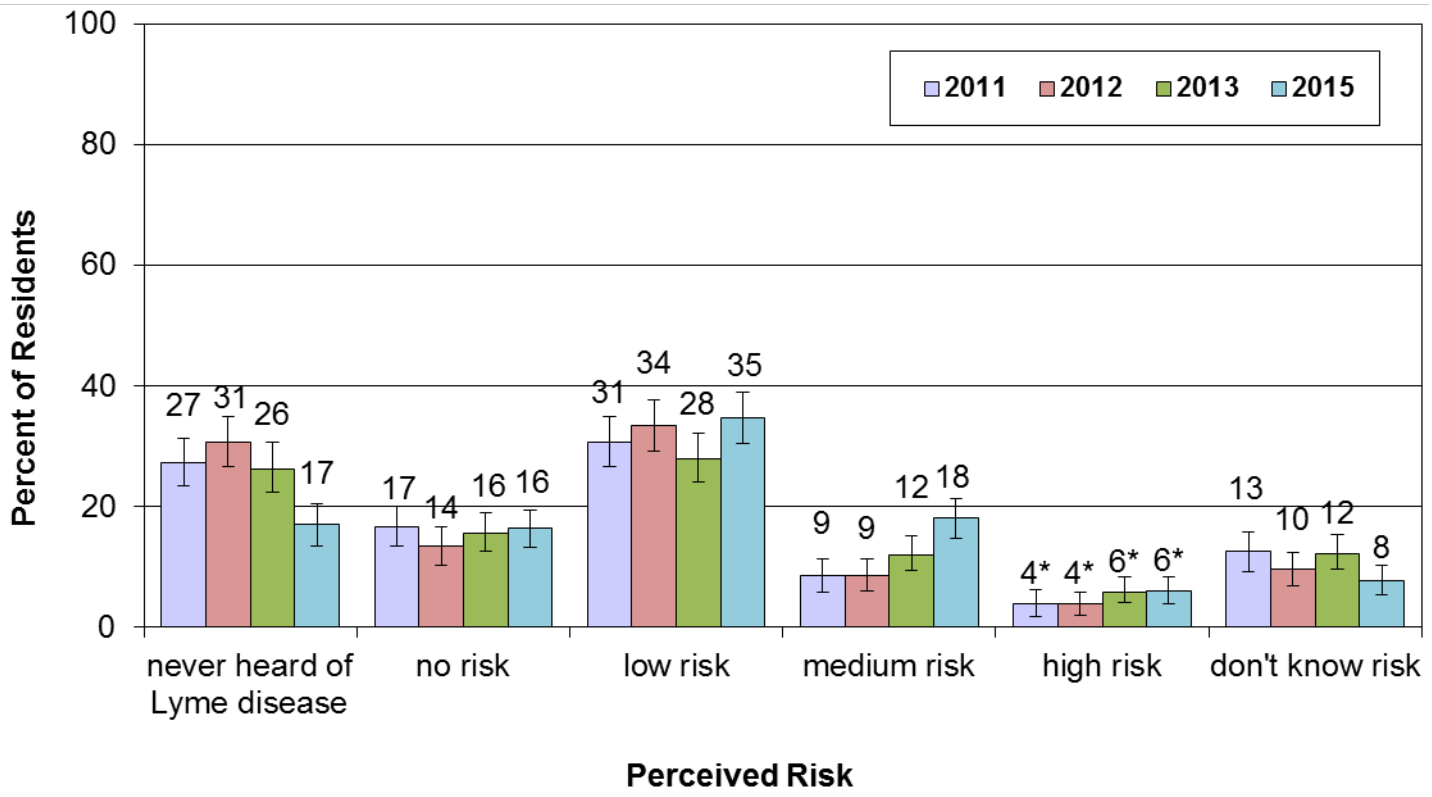
**Interpret with caution due to high variability.*

Among those who had heard of LD, **41%** (±5%) indicated that they would remove a tick attached to their skin by pulling it out with tweezers or some other tool. This did not change significantly from previous years. Using tweezers is the method recommended for safe tick removal. **Fifteen** per cent (15% ±4%) indicated that they would go to a hospital, clinic, doctor, or other health care service. Other methods mentioned by respondents were applying heat, salt or alcohol (9%* ± 3%) or pulling, brushing or flicking with your hand (17% ±3%). These methods are not recommended. Less than half of residents (46% ±5%) knew that ticks could be sent for Lyme disease testing.

LD Perceived Risk

Most Durham Region residents did not consider themselves to be at much risk of contracting LD during the fall of 2015. Those who had never heard of LD (**17%** ±4%) would not be aware of any risk and a further **51%** (±4%) considered themselves at low or no risk of getting LD. Another **24%** (±3%) felt they were at medium or high risk and **8%** (±3%) could not identify their level of risk. This pattern showed no significant changes from previous years.

Graph 4: Perceived Risk of Getting Lyme Disease, Adults 18+, Durham Region, 2011-2013, 2015



**Interpret with caution due to high variability.*

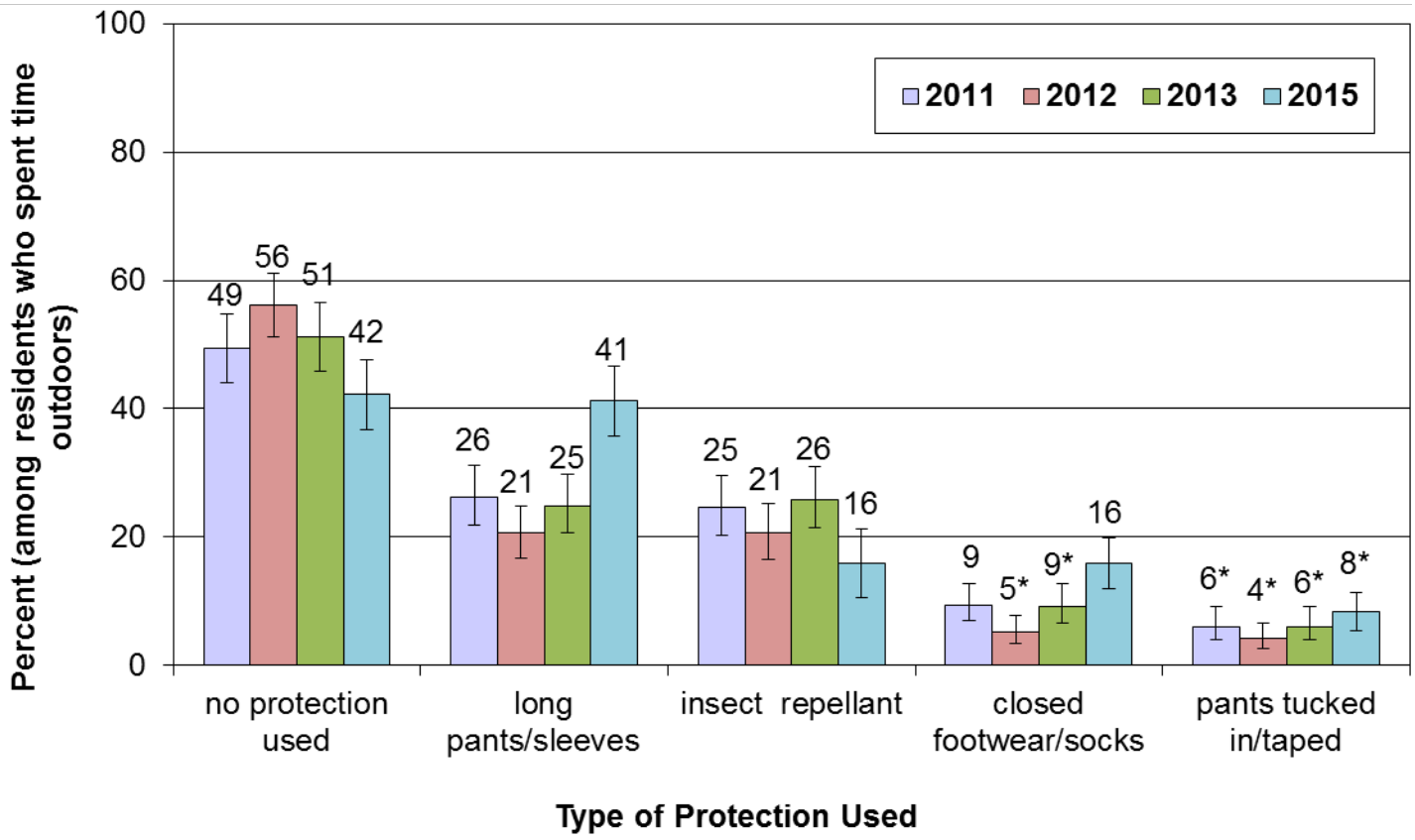
LD Personal Protective Behaviours

During the fall of 2015, three quarters (**67%** ±5%) of Durham Region adults aged 18 and over spent time outdoors in grassy fields or wooded areas. Among these residents, 36% (±5%) protected themselves every time or most of the time, 15% (±4%) protected themselves only sometimes or rarely and half (50% ±6%) never took steps to protect themselves from tick bites while in these areas. This pattern showed a significant increase from 2015 compared to previous years.

The most common methods of tick protection used were wearing long pants and sleeves (**41%** ±5%) and/or wearing closed footwear and/or socks (**16%** ±4%). Using insect repellant was mentioned by **12%** (±3%) of residents, and only **4%*** (±2%) specifically mentioned using DEET. **Eight per cent** (8%* ±3%) said they tucked in or taped the bottom of their pants. The number of Durham residents who wore long pants and sleeves when spending time outdoors in grassy fields or wooded areas significantly increased from 2013 compared to 2015.

After being outside, only **25%** (±5%) checked themselves for ticks every time or most of the time, **10%*** (±4%) sometimes or rarely and over two thirds (**65%** ±6%) never checked themselves. There has been a significant increase in use of protective methods since 2013.

Graph 5: Type of Tick Protection Used by Adults (18+) who Spent Time Outdoors in Grassy Fields or Wooded Areas, Durham Region, 2011-2013, 2015



**Interpret with caution due to high variability.*

Overall Summary / Conclusions

West Nile Virus

Surveillance activities have revealed that WNV has been present in one or more of the adult mosquito, wildlife, or human populations, within Durham Region, since 2002.

Each year since 2002, in order to control the spread of WNV, the DRHD has instituted a Vector Control Plan which includes control measures such as adult mosquito surveillance, larval mosquito surveillance, the monitoring of human health effects / complaints, as well as a public awareness campaign focusing on source reduction, and personal protective measures.

For several years, the Vector Control Plan included an active avian (dead bird) surveillance component. However, this surveillance was discontinued in Durham Region in 2009, resulting in no birds being collected and submitted for testing by the DRHD since that time. General public inquiries and atypical avian fatalities are still referred to CCWHC for their follow-up, which may include bird pick-up and testing.

No equine cases of WNV were reported in Durham Region in 2016, but OMAFRA reported 2 cases of equine WNV in Ontario (OMAFRA website last updated October 5, 2016).

Every year, beginning 2003, DRHD has contracted a licensed PCO, and licensed laboratory, to assist in the delivery of the Vector Control Program. For the 2016 season, CCMM was tasked with providing larvicide treatments to control Durham's larval mosquito population, while Entomogen Inc. was tasked with laboratory identification and testing of adult mosquitoes.

With regard to larval mosquito surveillance, DRHD and CCMM field staff combined to conduct a total of **3,365** inspections at identified standing water sites (including SWMPs, ditches, field pools, etc.) throughout Durham Region. These inspections resulted in **684** larvicide applications to standing sites where live mosquito larvae were identified.

Adult mosquito surveillance (trapping) was conducted in Durham Region between CDC weeks 24 (w/o June 13, 2016) and 39 (w/o September 26, 2016). The surveillance program consisted of a network of up to 13 trapping stations distributed over **7** of 8 local municipalities. Over the 16 week capture period a total of **199** traps were set, and **23** different mosquito species or species groups were identified. Of the 23 species, 10 are representative of WNV vector or bridge vector species.

A total of **9,347** adult mosquitoes were captured during the 2016 season. This is significantly lower than the number captured during any of the previous four seasons.

WNV vectors, primarily *Culex pipiens/restuans,* represented 21% of total adult mosquito captures in Durham Region in 2016. Bridge vectors represented 24% of total captures and non-vector species made up the remaining 55% of captures. *Aedes vexans vexans* was the predominant bridge vector species observed at 14% of all captures.

Overall, *Cq. perturbans* was the dominant adult mosquito species captured in 2016, representing 53% of total captures. While *Cq. perturbans* is not an efficient WNV vector, the species is thought to have some significance with regard to WNV transmission due to its relative abundance and aggressive nature.

The percentage of *Culex pipiens/restuans* within the captured adult mosquito population was higher in 2016 (20% species abundance) than in 2015 (15% species abundance) or 2014 (9% species abundance), but was lower than in 2013 when it represented 33% of all captures.

A "degree-day" analysis was conducted for the 2016 season, by Entomogen Inc., from weather data collected at the Environment Canada, Oshawa Water Pollution Control Plant station. Based on an accumulated degree day model, used by PHO, Entomogen has indicated that the rate at which WNV replicates within adult female *Culex pipiens/restuans* depends on the ambient temperatures. Below an average daily temperature of 18.3^{o}C WNV does not appear to incubate in the mosquito. A total of 380 accumulated degree days would have been required for 50% of infected *Culex pipiens/restuans* mosquitoes to have tested positive for WNV. Since there were only 176 accumulated degree days observed in Durham Region in 2015, Entomogen concluded that there were "insufficient heat units in 2016 for amplification of the virus in *Culex spp. m*osquitoes".[^]

In 2016, a total of **374** pools of captured mosquitoes were tested for the presence of WNV using the RT-PCR method. **10** of the 374 pools tested positive for the presence of WNV. *Culex pipiens/restuans* mosquitoes were responsible for 9 of the 10 WNV-positive pools, while the last WNV-positive pool was comprised of Aedes vexans vexans mosquitoes.

The 10 WNV-positive mosquito pools identified in 2016 represented a dramatic increase over the 0 positive pools seen in both 2015 and 2014. The 2016 results are more in line with the results seen in 2013 (15 positive pools) and 2012 (17 positive pools).

Durham Region had **1** confirmed human case of WNV and **1** probable case reported in 2016. This is the same as in 2015. Reported human case numbers have remained very low in the past 5 years apart from the 5 confirmed and 2 probable cases reported in 2012.

As of November 12, 2016, for the 2016 WNV season, PHAC had reported **46** clinical human cases of WNV in Ontario and **100** clinical cases for all of Canada.[ɣ] In comparison, for 2015, PHAC reported 33 clinical human cases of WNV in Ontario and

78 clinical cases for all of Canada. For 2014, PHAC reported a total of 21 human cases, with 9 (42.9%) classified as WNV neurological syndrome, 10 (47.6%) classified as WNV non-neurological syndrome, and two (9.5%) unclassified/unspecified.[*]

In the USA, as of January 17, 2017, a total of 2,038 cases of human WNV, including 94 deaths, were reported by the CDC. Of these, 1,140 (56%) were classified as neuro-invasive disease (such as meningitis, encephalitis, or acute flaccid paralysis) and 898 (44%) were classified as non-neuro-invasive disease.[+] Human WNV case numbers in the USA have generally been dropping since 2012 when 5,674 cases and 286 deaths were reported.

[^]Source: Entomogen Inc., West Nile Virus Mosquito Surveillance Report and Notes on Eastern Equine Encephalitis Virus Mosquito Testing, 2015-The Regional Municipality of Durham

[¥]*Source: Public Health Agency of Canada (PHAC), Surveillance of West Nile Virus, link: http://healthycanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/west-nile-nil-occidental/surveillance-eng.php#s1*

[*]Source: Public Health Agency of Canada (PHAC), West Nile Virus and Other Mosquito-Borne Disease National Surveillance Report, 2014-Final, link: *http://healthycanadians.gc.ca/publications/diseases-conditions-maladies-affections/west-nile-2014-nil-occidental/index-eng.php*

[+]Source: Centers for Disease Control and Prevention, West Nile Virus Disease Cases and Presumptive Viremic Blood Donors by State-United States, 2015 (as of December 16, 2015), link: *http://www.cdc.gov/westnile/statsmaps/preliminarymapsdata/histatedate.html*

Eastern Equine Encephalitis

An increase in EEE activity in bordering US states and in Quebec in recent years prompted the MOHLTC to request that PHUs enhance their adult mosquito surveillance for EEE vector mosquitoes for each of the 2011, 2012, and 2013 surveillance years. During 2013, in Durham Region, a total of 128 pools of adult mosquitoes were tested for the presence of EEEV. None of these pools were found to be EEEV-positive.

After finding no EEEV-positive mosquito pools in any of the 2011, 2012 or 2013 surveillance years, DRHD, in consultation with PHO, reverted to traditional surveillance protocols in 2014 WNV season. **No** EEEV-positive pools were identified in any of 2014, 2015, or 2016.

No equine cases of EEE were reported in Durham Region during 2016, and OMAFRA reported **0** equine cases across Ontario. In comparison, 5 equine cases were reported in Ontario in 2015, 24 in 2014, and 1 case was reported in 2013.[≠]

In the USA, **115** equine cases of EEE were reported in 2016 (as of January 3, 2017). In 2015, 68 equine cases were reported as compared to 133 equine cases in 2014, and 192 cases in 2013.[∞]

No human cases of EEE were reported in Durham Region in 2016 and, to date, no human cases have ever been reported by PHO/MOHLTC in Ontario.[α] As of the date of this report, no data has been available with regard to human cases of EEE in the USA since 2013 when the CDC reported 8 cases. [¥]

[≠]Source: Ontario Ministry of Agriculture, Food and Rural Affairs, Equine Neurological Disease Surveillance 2016, Cases of Equine Neurological Disease in Ontario – 2016, last updated October 5, 2016, link: *http://www.omafra.gov.on.ca/english/livestock/horses/facts/nhd_surv2016.htm*

[∞]Source: United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), 2016 Equine Case Reports of Eastern Equine Encephalitis reported to the ArboNET reporting system as of 01/03/2017, link *https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/2016_eee_report.pdf*

[α]Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario).Vector-borne diseases 2015 summary report. Toronto, ON: Queen's Printer for Ontario; 2016, link: *https://www.publichealthontario.ca/en/eRepository/Vector_borne_diseases_Summary_report_2015.pdf*

[¥]Source: United States Centers for Disease Control and Prevention (CDC), Eastern Equine Encephalitis - Epidemiology and Geographic Distribution, link: *https://www.cdc.gov/EasternEquineEncephalitis/tech/epi.html*

Lyme Disease

In 2010, the MOHLTC and PHUs initiated a campaign to increase public awareness of LD in response to an increase in the number of established populations of blacklegged ticks in the southern part of the province.

For the past number of years, the number of ticks submitted to DRHD for identification and potential testing for LD (passive surveillance), has been steadily increasing. Tick specimens, removed from human hosts, may be submitted either by the public or by

their health care providers. In 2016, a total of **83** tick specimens were submitted. In comparison, 84 ticks were submitted in 2015, 35 ticks in 2014, and 28 in 2013.

Fifty-seven of the **83** ticks submitted in 2016 were confirmed to be blacklegged ticks (*Ixodes scapularis*). **Thirty-nine** of the 57 blacklegged ticks were reported to have likely been acquired locally within Durham Region. To date, only **4** of the 57 blacklegged ticks identified have tested positive for *Borrelia burgdorferi* and only **1** of the 4 positive ticks was likely acquired within Durham Region.

DRHD has conducted active tick surveillance (tick dragging), in likely tick habitats across Durham Region, since 2010. For the first time, in the fall of 2013, blacklegged ticks were found at 2 separate sites in Whitby. Subsequently, in the fall of 2014, blacklegged ticks, positive for *B. burgdorferi*, were collected during active surveillance in the Rouge Valley in Pickering.

During 2016, a total of **8** ticks were found at **3** separate sites in Durham Region. All 8 ticks were identified as blacklegged ticks. **None** of the 8 ticks tested positive for *Borrelia burgdorferi*.

The human case surveillance data for Durham Region indicates that there were **16** confirmed and **8** probable human cases of LD reported in Durham Region in 2016. Confirmed and probable LD cases are defined within the MOHLTC *Infectious Diseases Protocol*.[qi]

Two of the **16** confirmed cases of LD reported that they most likely were exposed to a tick within Durham Region (i.e. the 2 cases were likely "locally acquired"). The other 14 confirmed cases reported travel to or residence in an endemic/risk area as a risk factor for LD exposure. Of the **8** probable LD cases, **3** reported that they most likely were exposed to a tick within Durham Region

[qi]Ontario Ministry of Health and Long-term Care Infectious Diseases Protocol, Appendix B: Provincial Case Definitions for Reportable Diseases, Disease: Lyme Disease, Revised April 2015, link:

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/infdispro.aspx

Currently, the risk of acquiring LD within Durham Region remains low. However, as a result of the recent passive and active tick surveillance findings, active surveillance activities will continue to be enhanced in likely tick habitats in 2017 and steps will be taken to increase public and physician knowledge about Lyme disease and personal precautions to avoid tick exposures.

Other Vector-borne Diseases of Concern

Historically, human cases of malaria, plague, tularemia and yellow fever have been rare in Durham Region. There were **6** confirmed cases of malaria reported in Durham Region in each of the 2016 and 2015 surveillance years. However, in all cases where exposure details were available, travel to or residence in an endemic area was listed as a risk factor for exposure.

There were **no** cases of tularemia or yellow fever reported in Durham Region in 2016 and there have been **no** cases of plague reported anywhere in Canada since 1939.

DRHD received a number of inquiries about Zika virus throughout 2016. Information about Zika virus transmission, personal precautions to avoid transmission, and viral testing is provided on the Durham Region website.

Outlook / Plans for 2017

- Maintenance of an effective vector surveillance (adult and larval mosquito) program for WNV and EEEV.
- Maintenance of a passive surveillance program for blacklegged ticks (*Ixodes scapularis*).
- Enhancement of an active surveillance program for blacklegged ticks.
- Maintenance of effective human surveillance programs for WNV, EEEV, LD, malaria, plague, tularemia, and yellow fever.
- Where possible, reports of equine cases of WNV and EEE will be investigated.
- Maintenance of an effective control program for WNV vector populations (i.e., *Culex pipiens/restuans*) in municipal and private catch basins, and in open water sites such as SWMPs, sewage lagoons, and ditches, beginning May/June, and continuing through to the end of September.
- Maintenance of an effective control program for *Aedes vexans* and other secondary vector species via monitoring of and, where necessary, larviciding of ditches, temporary pools, etc., from early May through to the end of September.
- Maintenance of effective and timely communications with municipal representatives to promote the upkeep and/or remediation of municipal properties.
- Maintenance of a 48 hour response to public complaints regarding potential mosquito breeding sites on public and private property (i.e., derelict swimming pools, ornamental ponds, backyard catch basins, and other areas of standing water).
- Maintenance and enhancement of partnerships with local municipal by-law departments in respect to the investigation of stagnant water complaints.
- Maintenance of an effective and comprehensive public communication campaign designed to educate the community regarding WNV and the need for source reduction, vector control, and personal protective measures against mosquitoes. In the absence of a vaccine or cure for infections caused by WNV, the cycle of transmission must be interrupted to prevent outbreaks. The promotion of personal protective measures through public education is an important step in combatting both WNV and EEE.
- Continued development of an effective and comprehensive public communication campaign that is designed to educate physicians and the community regarding LD and the need for personal protective measures against ticks.
- Development of a communication campaign designed to educate health care providers and the public regarding Zika virus, with respect to the need for

personal protective measures against mosquitoes when travelling and the need to prevent sexual transmission of the virus to women who are pregnant or who may be planning a pregnancy.

- Maintenance of surveillance of WNV personal and household protective behaviours using RRFSS.
- Continued use of a RRFSS survey module to measure public awareness about LD.

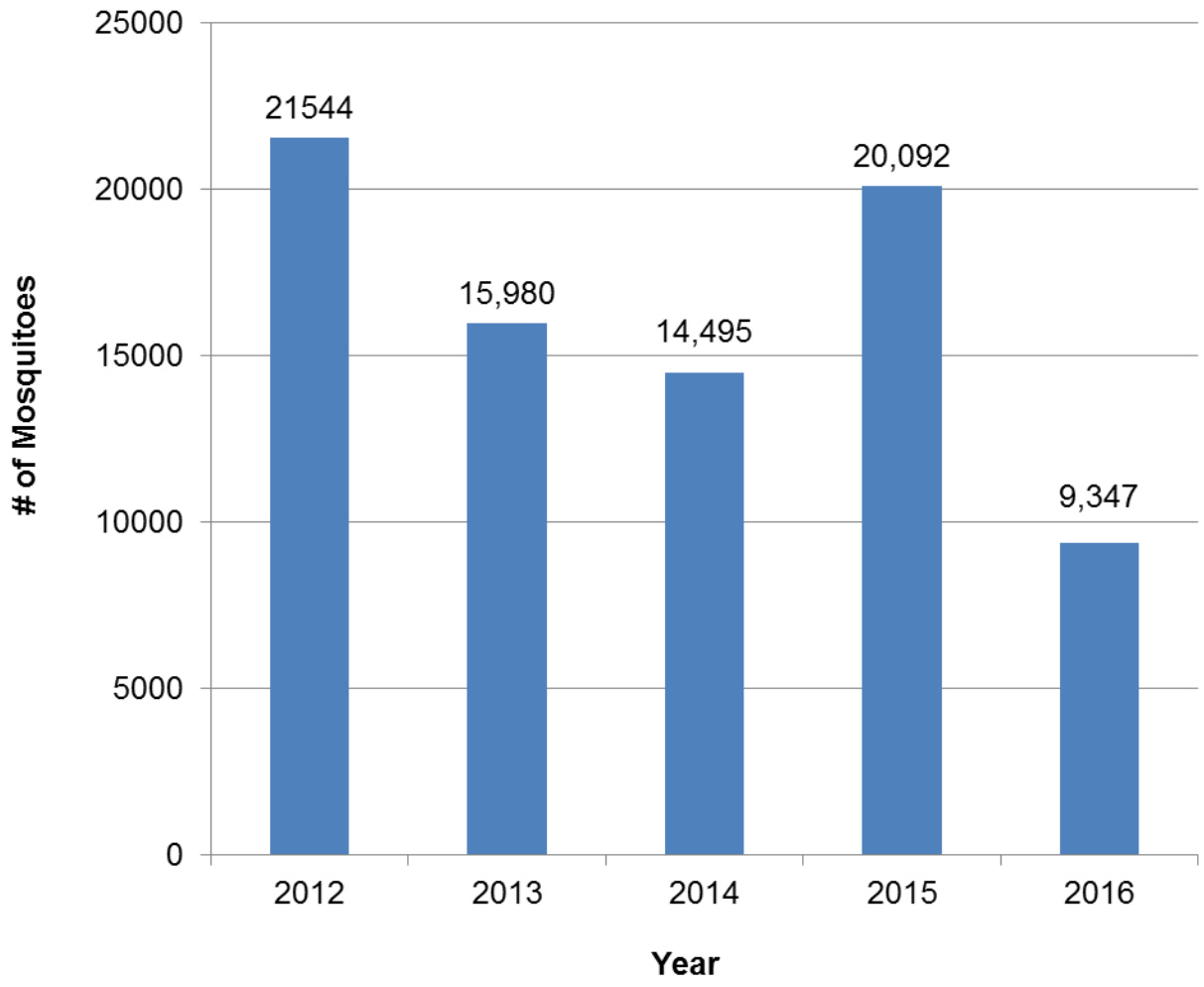
Appendix A

Graphs of West Nile Virus, Eastern Equine Encephalitis, and Lyme Disease / Tick Surveillance Results

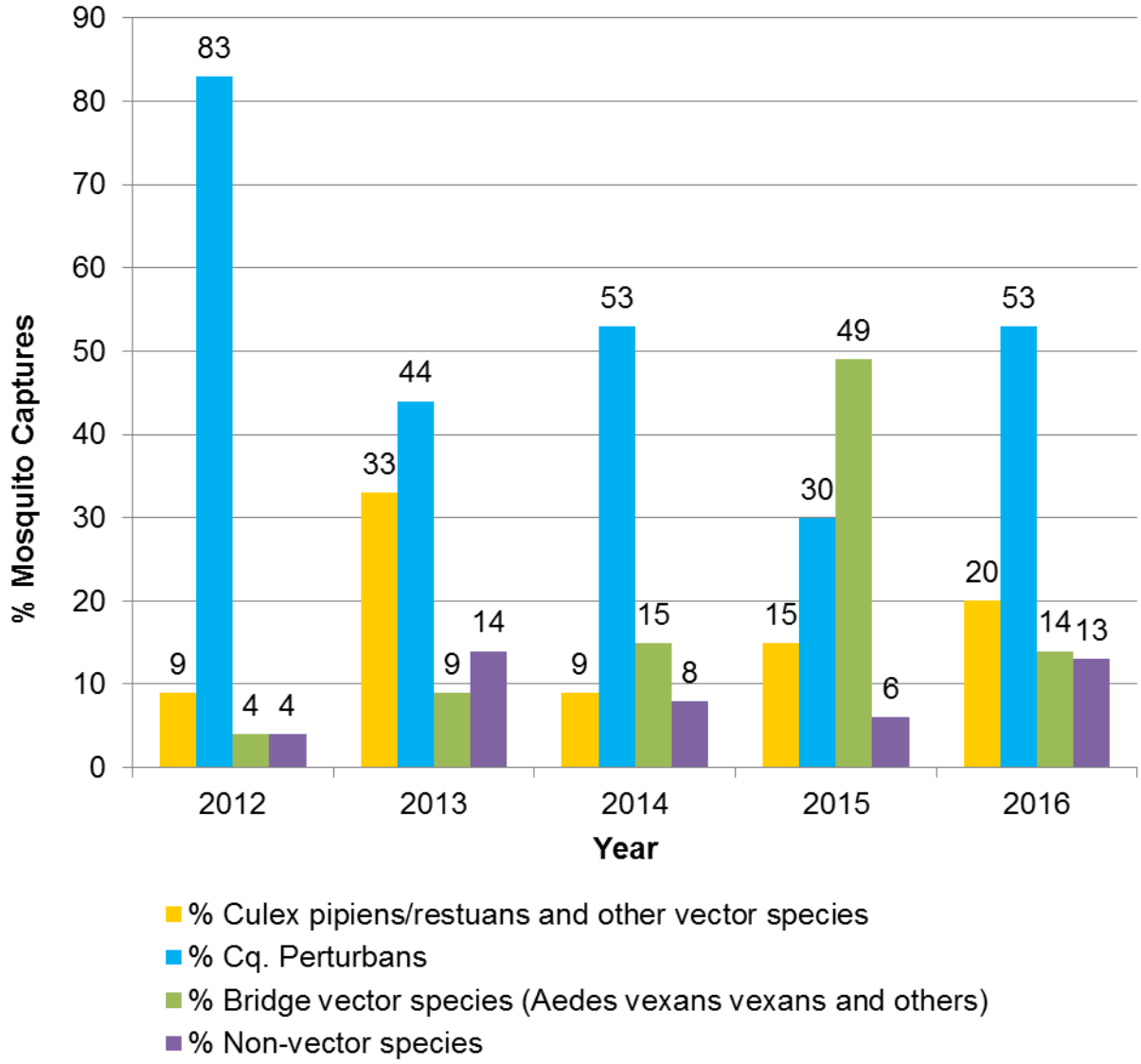
(2012 - 2016)

West Nile Virus

Graph 6: Adult Mosquitoes Captured Per Year – Durham Region (2012-2016)

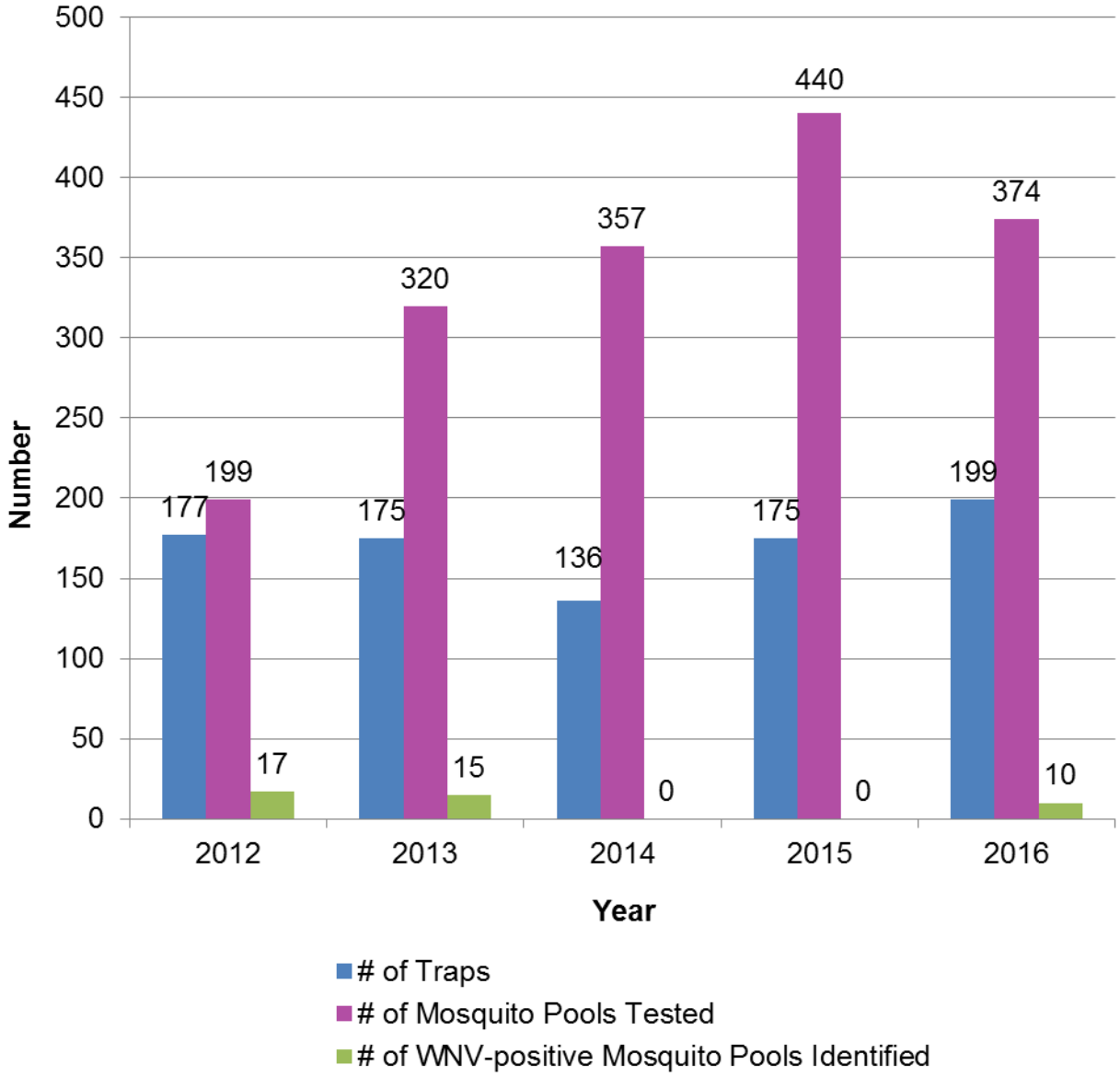


Graph 7: Mosquito Species Distribution - Durham Region (2012-2016) (% based on adult mosquito captures)

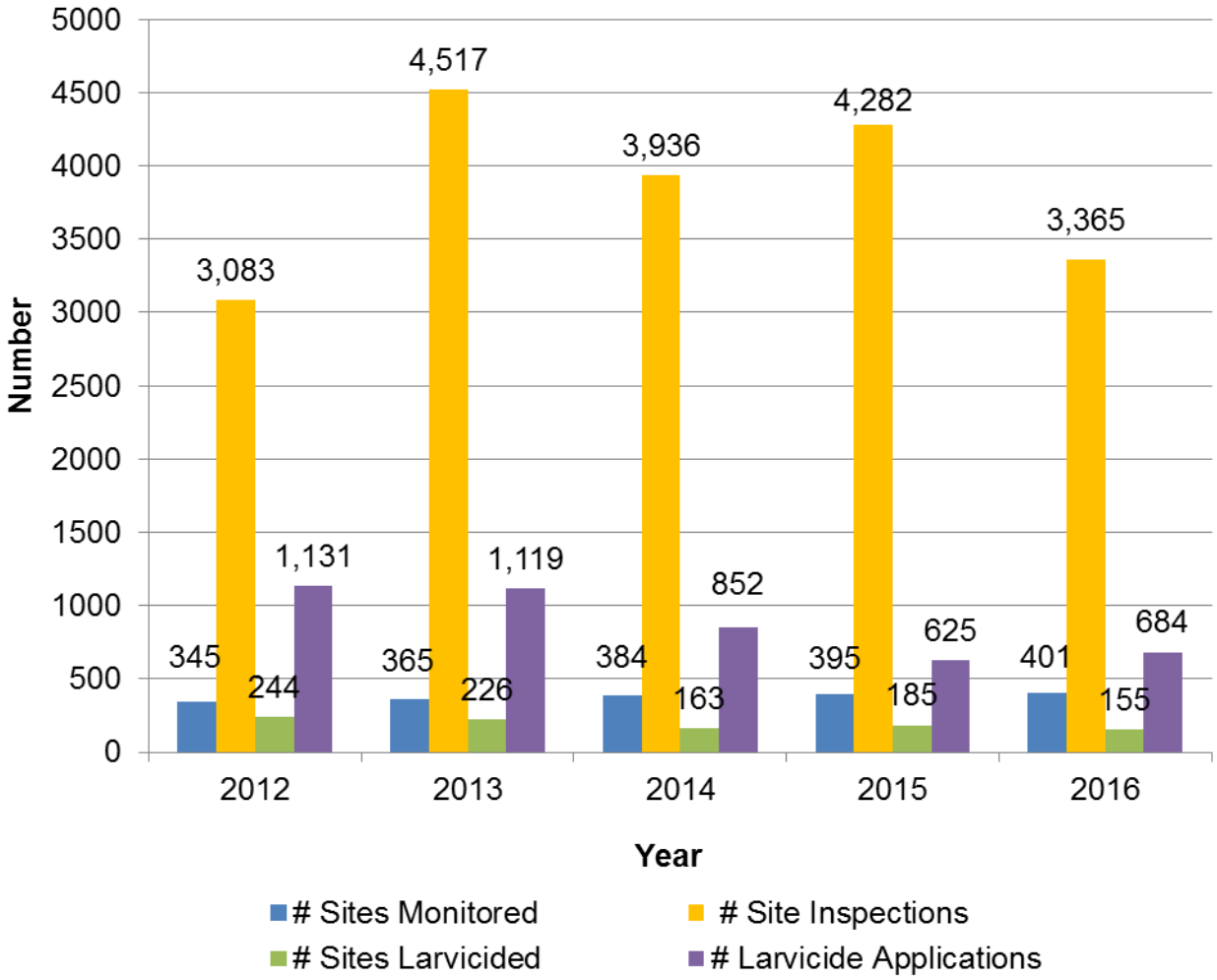


Note: While Cq. perturbans is not considered to be a very efficient WNV vector, it is thought that it may still play a role in WNV transmission to humans due to its relative abundance and aggressive nature.

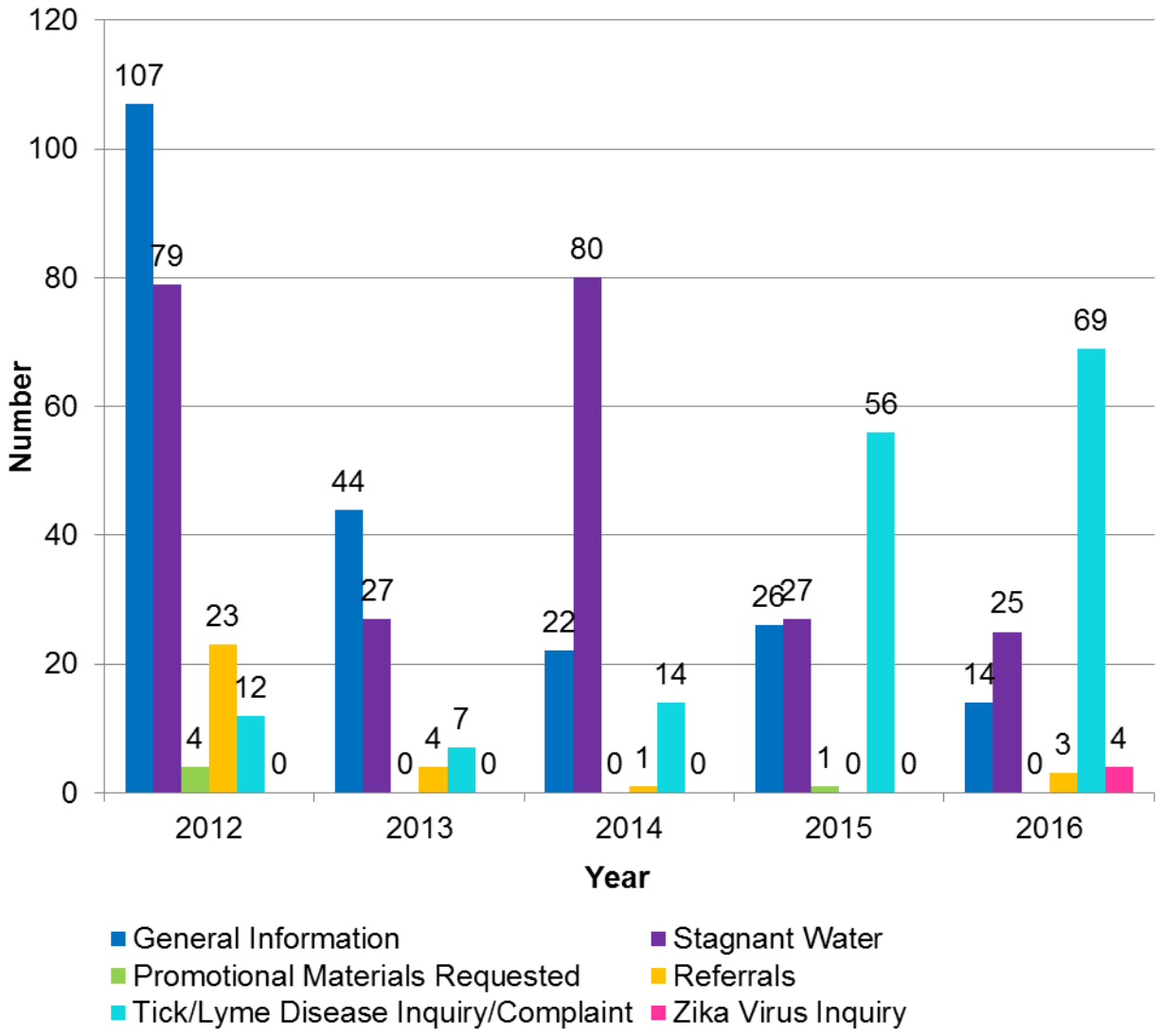
Graph 8: Results of Adult Mosquito Trapping (2012-2016)



Graph 9: Results for Standing Water Site Surveillance - Durham Region (2012-2016)



Graph 10: Response to Public Inquiries - Environmental Help Line, Durham Region (2012-2016)

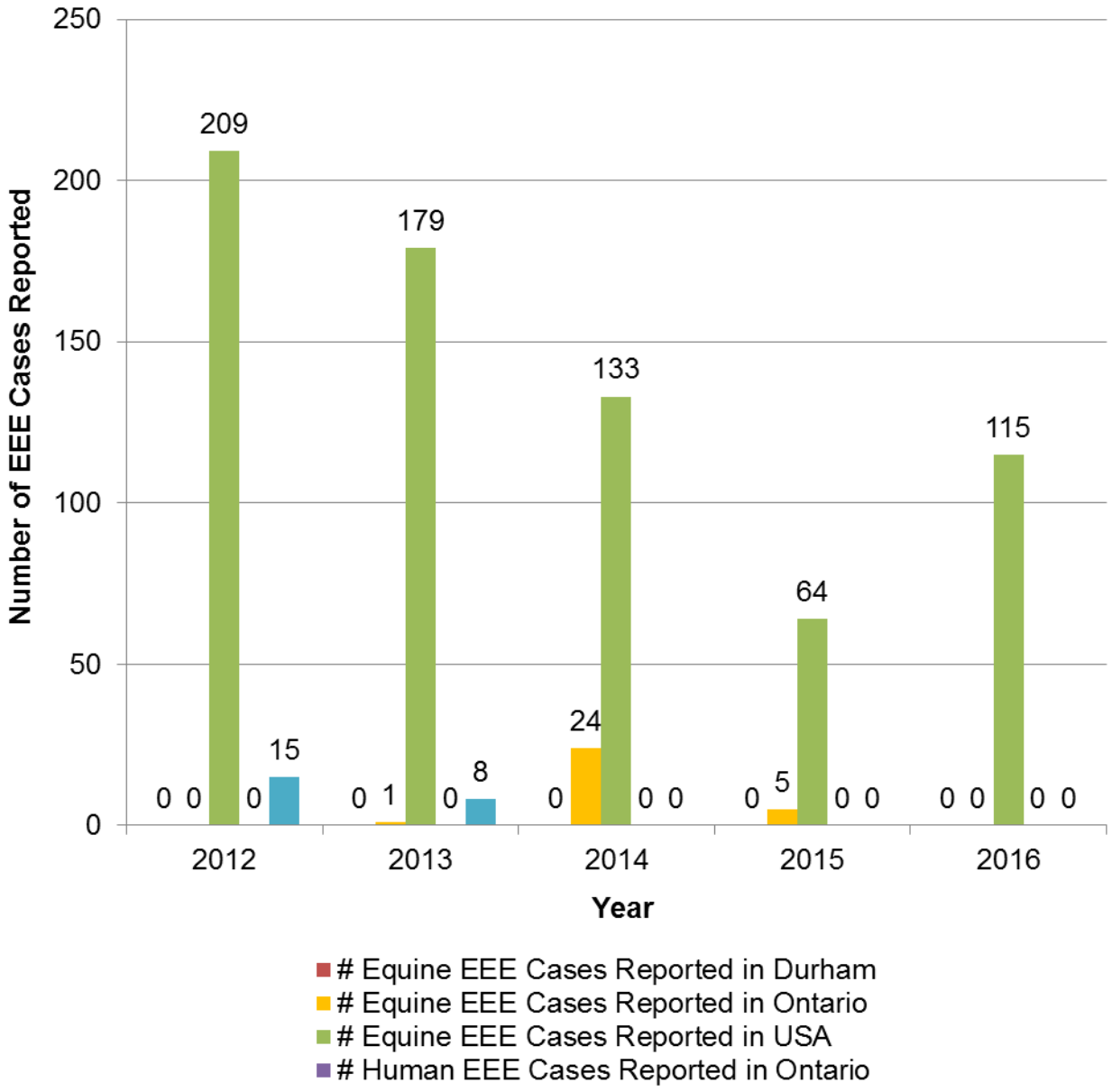


Note 1: The category Tick/Lyme Disease Inquiry/Complaint was first created in 2012 to track the increasing number of inquiries related to the transmission of Lyme disease (LD).

Note2: The category Zika Virus Inquiry was first created in 2016 to track inquiries, from the public and physicians, related to Zika Virus transmission and testing.

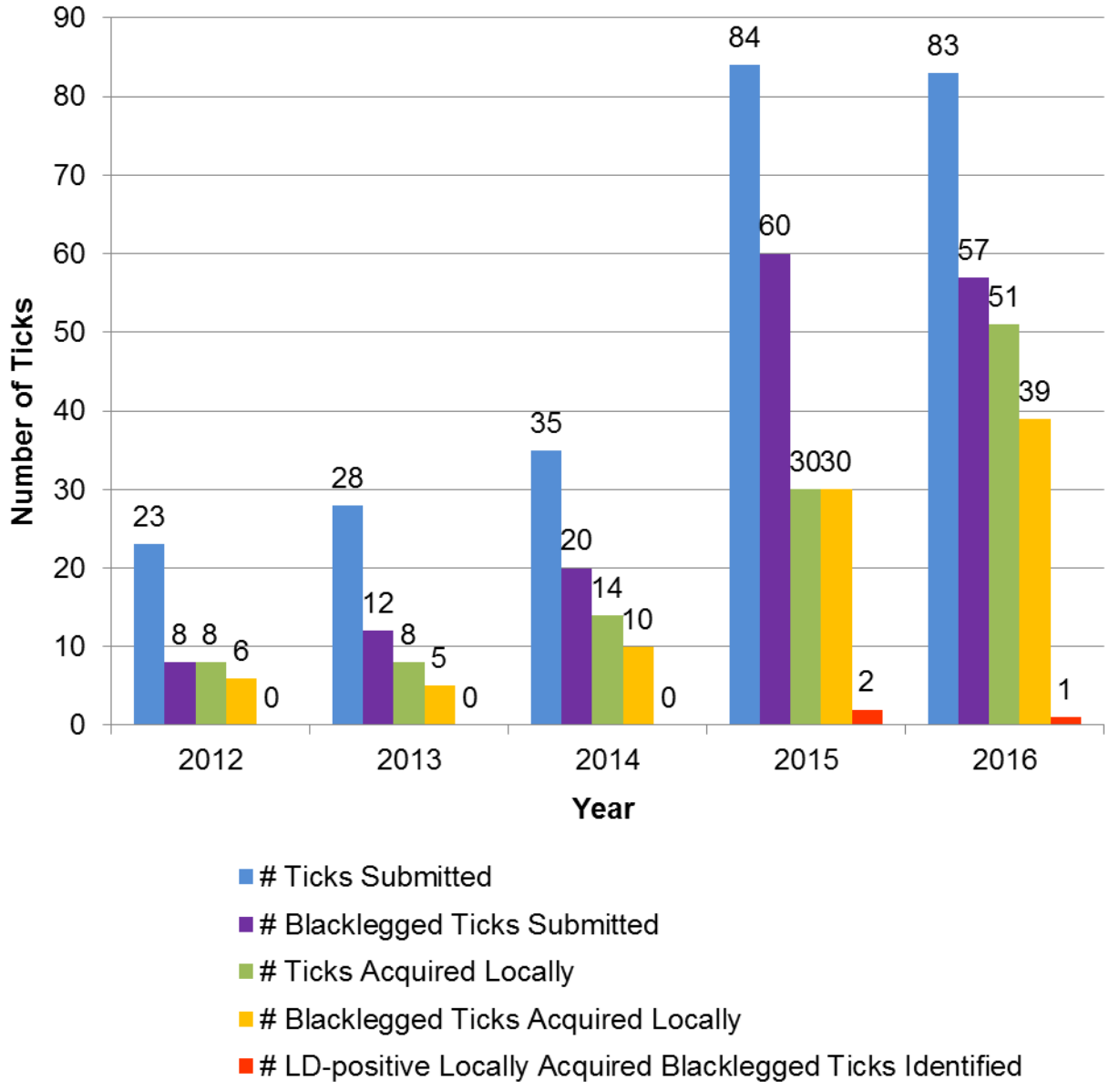
Eastern Equine Encephalitis

Graph 11: Eastern Equine Encephalitis Surveillance Results (2012-2016)

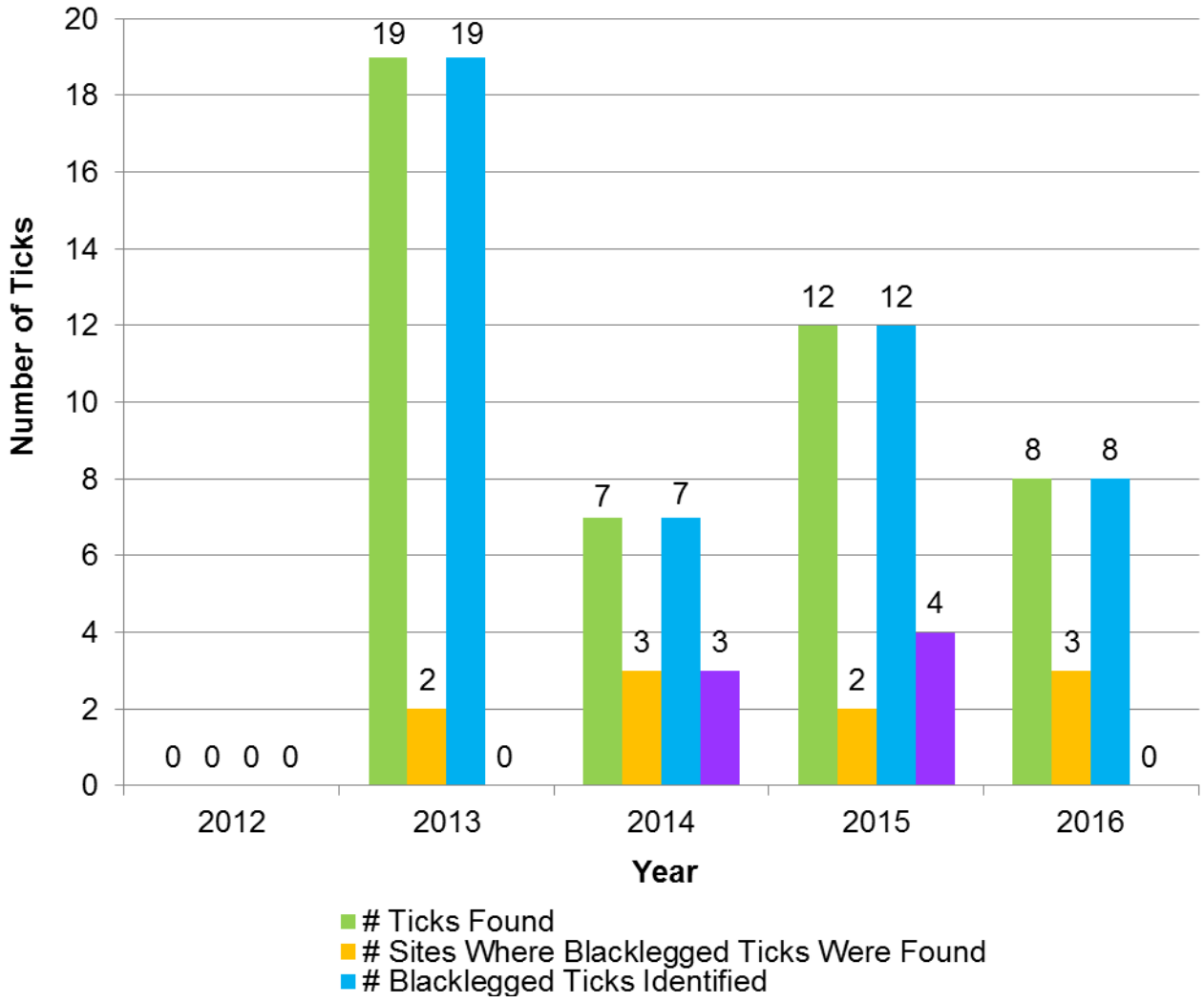


Lyme Disease / Ticks

Graph 12: Results of Passive Tick Surveillance - Durham Region (2012-2016)

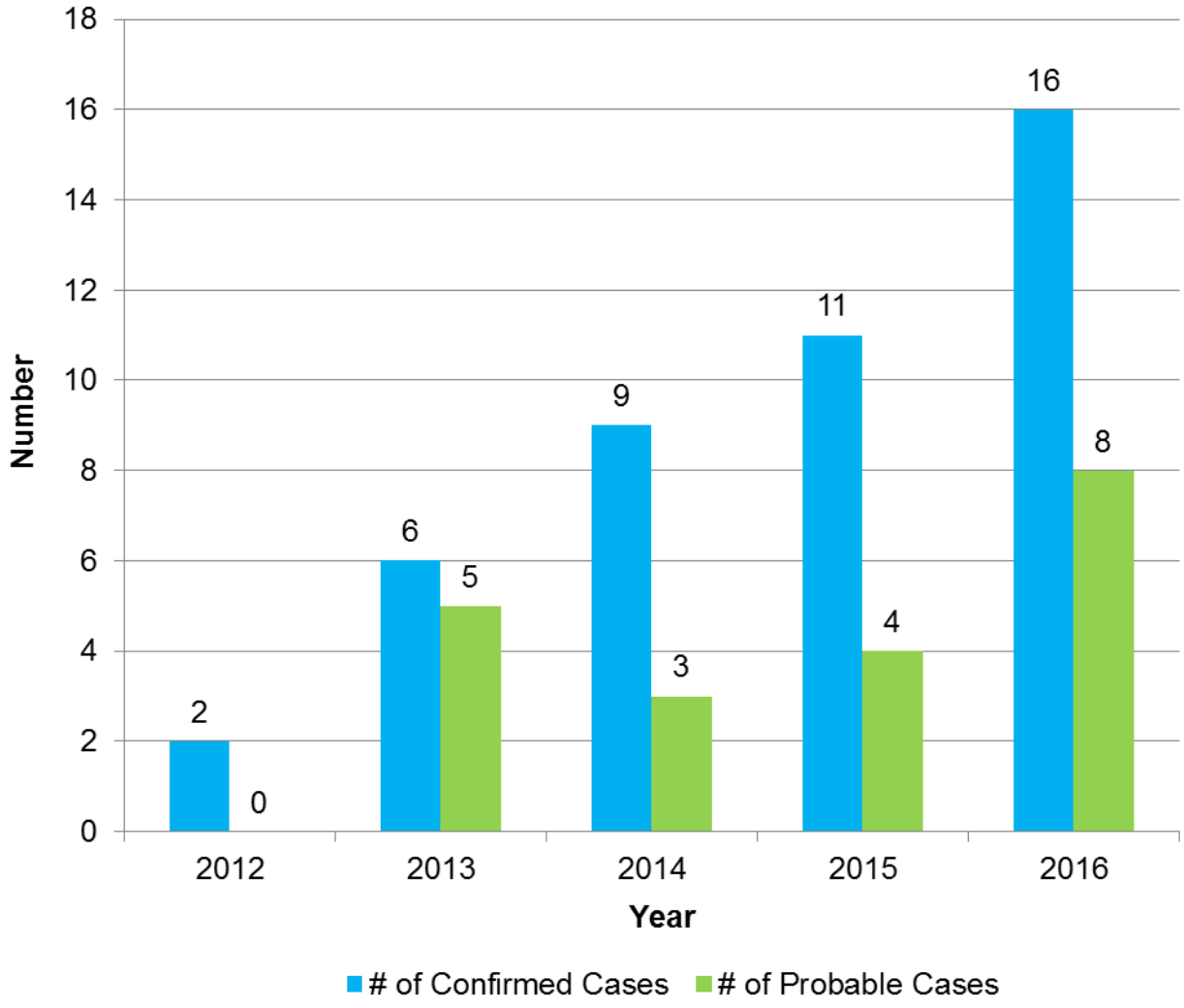


Graph 13: Results of Active Tick Surveillance - Durham Region (2012 - 2016)



Note: No ticks were found during active surveillance activities in Durham Region in 2012.

Graph 14: Human Cases of LD - Durham Region (2012-2016)



DURHAM REGION

HEALTH DEPARTMENT

Mar17

Environmental Help Line
1-888-777-9613
durham.ca

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2305

The Regional Municipality of Durham
Information Report

From:	Commissioner of Finance
Report:	#2017-INFO-37
Date:	March 24, 2017

Subject:

Economic Update

Recommendation:

Receive for information.

Report:

1. Purpose

1.1 The purpose of this report is to provide information on current national, provincial, and local economic conditions.

2. Background

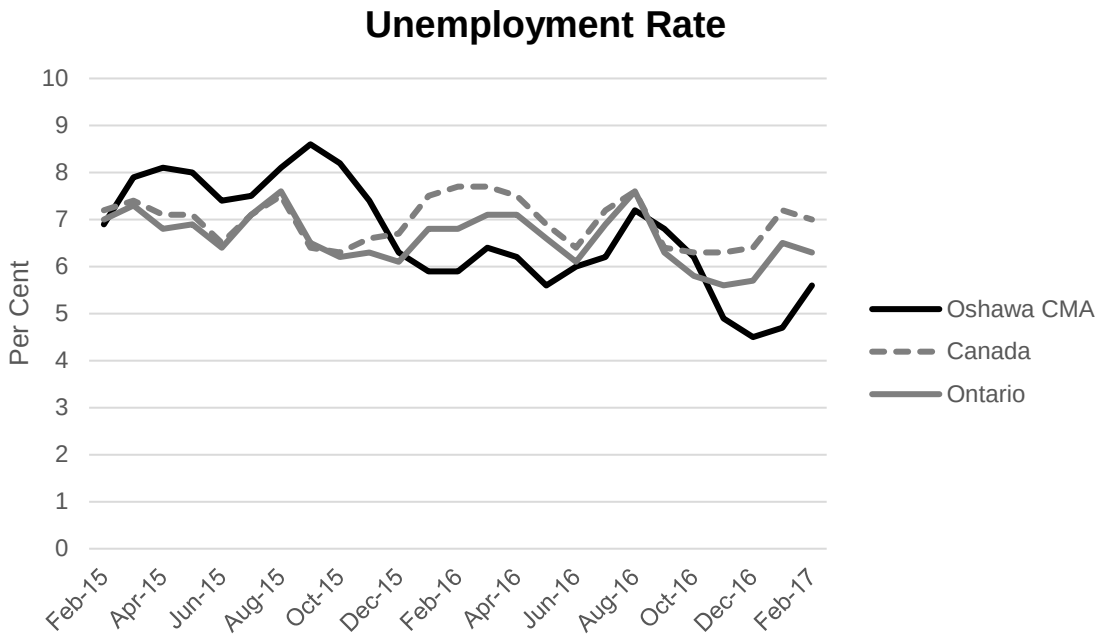
2.1 The Finance Department continues to monitor economic conditions as they pertain to the national, provincial and local economies on an ongoing basis with periodic summary reports to the Committee of the Whole and Regional Council.

2.2 This information assists in identifying risks and will be a key consideration as Regional staff work through the 2017 Business Planning process and multi-year forecast.

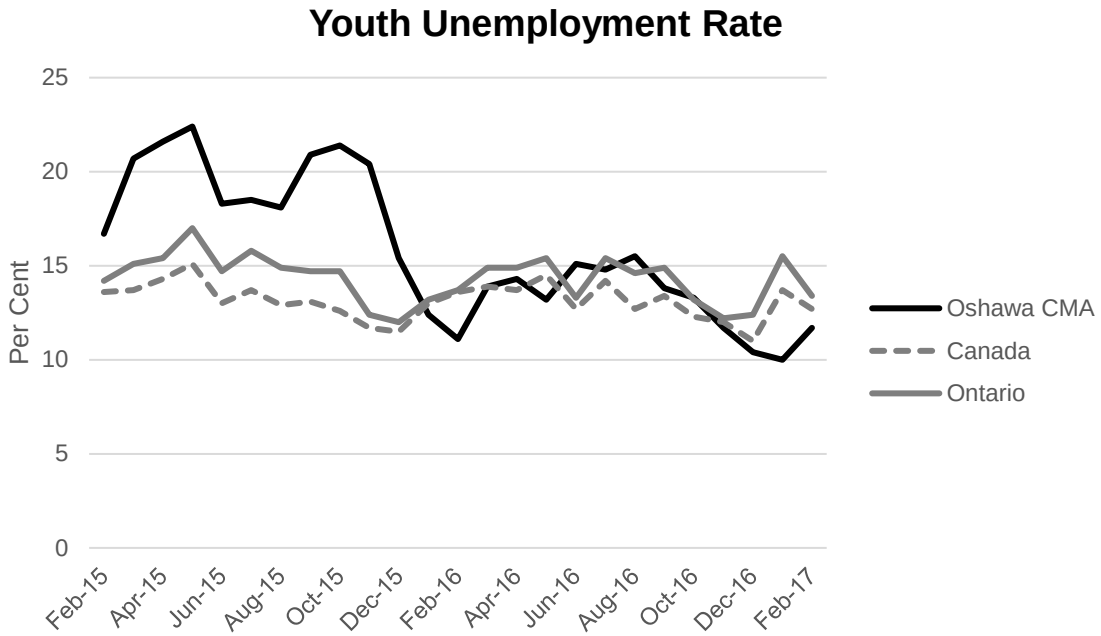
3. Economic Update

3.1 Unemployment

a. In February 2017, unemployment was measured at 5.6 per cent in the Oshawa Census Metropolitan Area (CMA). Meanwhile, Ontario and Canada experienced unemployment rates of 6.3 per cent and 7.0 per cent, respectively.



b. Among youths (aged 15 to 24) in the Oshawa CMA, unemployment was measured at 11.7 per cent in February 2017. Meanwhile, Ontario and Canada experienced youth unemployment rates of 13.4 per cent and 12.7 per cent, respectively.



3.2 Electricity Prices

a. On March 2, 2017, the Province announced the Fair Hydro Plan, aimed at lowering electricity costs to rate-paying customers.

b. While the average reduction for residential and eligible businesses is expected to be around 25 per cent overall, 8 per cent of the reduction is attributed to the provincial portion of the Harmonized Sales Tax (HST) already being rebated to eligible customers (as of January 1, 2017). While the impacts to Regional accounts is still to be determined through future regulation, the Region, as a public service body, is already rebated the majority of the HST related to its electricity costs.

c. Rate reductions are anticipated to be achieved through the restructuring of provincial payments to contracted generators, impacting mainly the Global Adjustment portion of electricity charges. The Provincial government is projecting added interest costs from the restructuring and deferral of payment streams, in the amount of about $1.4 billion per year, to be subsidized through the broader tax base.

d. Further impacts will be felt as costs associated with the Rural or Remote Rate Protection Program (RRRP) and the Ontario Electricity Support Program (OESP) are to be shifted from rate-payers to the broader tax base.

e. For customers who may not qualify for certain energy conservation programs (i.e. low-income), as part of the Plan, the Province is also proposing to establish an Affordability Fund, funded through provincial revenues, which will provide assistance to customers to implement energy conservation improvements to lower electricity requirements.

f. The announcement also discussed the expansion of the Industrial Conservation Initiative (ICI) program which allocates Global Adjustment charges differently to eligible large-use customers and rewards them for shifting and/or reducing loads during system-wide peak demand periods. While the ICI program had already experienced expanded program eligibility following prior amendments to O.Reg 429/04 under the Electricity Act effective January 1, 2017, the additional enhancement will lower the eligibility threshold from 1MW of average demand to 500kW. The result of this proposed adjustment is expected to result in several additional Regional facilities being able to participate in the ICI program as Class A customers.

g. The full impacts on Regional accounts are still not yet fully known. While the removal of the RRRP and OESP from invoicing can be expected to lower total regulatory charges across Regional accounts, the impacts from the overall lowering of electricity rates is still to be determined. Given that the Province has noted that impacts will be felt predominantly by households and eligible small businesses, the range of Regional accounts impacted by the proposed changes may be limited. Regional staff will continue to monitor development at the provincial level and provide updates to Committee and Council once additional details around the legislative amendments, and associated Regional impacts, are better known.

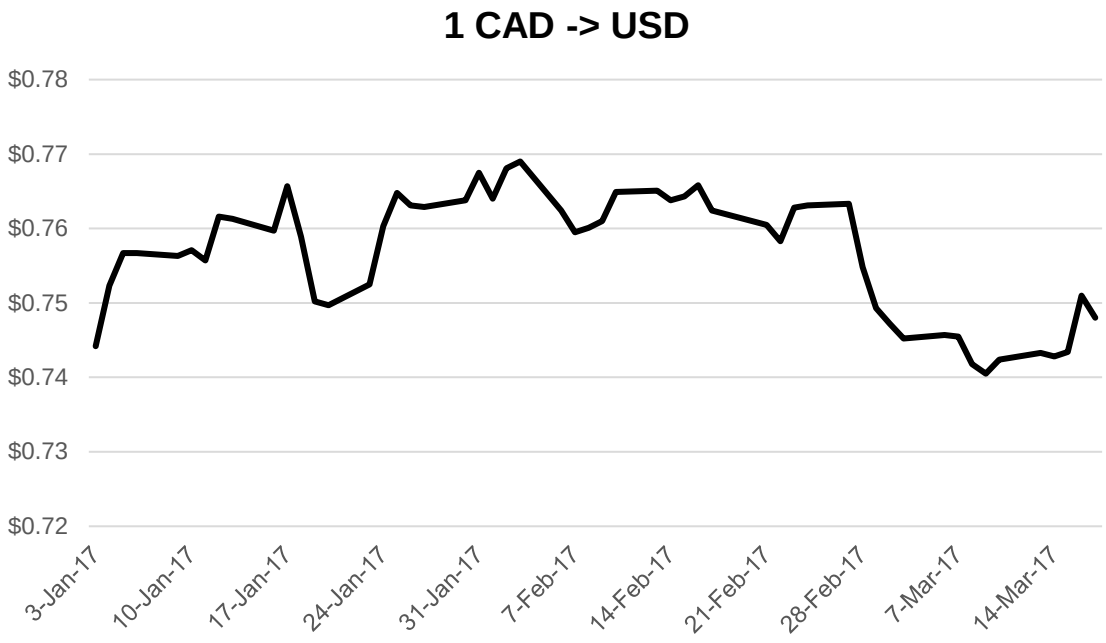
3.3 Monetary Policy

a. On March 1, 2017, the Bank of Canada announced that it is maintaining its target for the overnight rate at 0.5 per cent. Consumer Price Index inflation was 2.1 per cent in January 2017, reflecting higher energy prices due in part to carbon pricing measures introduced in two provinces. The next scheduled date for announcing the overnight rate target is April 12, 2017.

b. On March 15, 2017, the U.S. Federal Reserve raised its benchmark interest rate from 0.75 per cent to 1 per cent. A strengthening job market and rising prices have moved the Federal Reserve closer to its targets for employment and inflation.

3.4 Currency Exchange Rate

a. Throughout February and the first week of March 2017, the Canadian Dollar declined in value from about $0.77 to around $0.74 USD. The decrease in value coincided with a drop in crude oil prices to below $50 a barrel, and with expectations that the U.S. Federal Reserve would raise interest rates. Following stronger-than-expected domestic manufacturing data and news that future U.S. Federal Reserve interest rate hikes will proceed at a gradual pace, the Canadian dollar rose slightly to $0.75 USD.



3.5 Provincial Finances

a. In February 2017, the Province of Ontario released a report outlining its 2016-17 third quarter finances. The report projected a $1.9 billion deficit in 2016-17, a $2.4 billion improvement compared to the 2016 Budget.

b. Provincial revenue is projected to be $133.1 billion, an improvement of $2.5 billion compared to the 2016 Budget. This increase is largely due to higher-than-expected revenues arising from 2015 income tax revenue and the housing market.

c. Provincial program expense is $123.3 billion, an increase of $1.1 billion compared to the 2016 Budget projection. The increase reflects health care investments and electricity cost relief that took effect on January 1, 2017.

d. Interest on debt expense for 2016–17 is forecast to be $11.4 billion, $0.4 billion below the 2016 Budget forecast due to a combination of lower-than-forecast borrowing requirements and interest rates.

e. The Province has stated that Ontario's economy continues to perform well and private-sector economists expect Ontario to be one of Canada's fastest-growing provinces over the next two years.

3.6 Federal Finances

a. On March 22, 2017, the federal Finance Minister is expected to table the current government's second budget. Staff will report on implications for Durham Region following the budget's release.

b. In December 2016, the federal Finance Department released a fiscal trajectory report which stated that, barring any policy changes, the federal government could be on track to run annual shortfalls until at least 2050-51. It is forecasted that federal debt could climb past $1.55 trillion by that same year — more than double its current level.

c. In November 2016, the federal government's fall economic and fiscal statement predicted a deficit of $25.1 billion this fiscal year. Annual shortfalls were expected to decline over the coming years to $14.6 billion in 2021-22.

3.7 Housing Market

a. In February 2017, the average home resale price in Durham Region reached approximately $665,000, representing a 36 per cent increase over February 2016 ($490,081). Despite the significant increase, homes in Durham Region remain relatively affordable compared to those within other Greater Toronto Area municipalities.

b. Affordability stress in the Greater Toronto Area and prospects for higher interest rates may reduce demand in 2017. Meanwhile, the provincial Finance Minister has signaled that the province is evaluating measures to address the housing market.

3.8 Household Debt

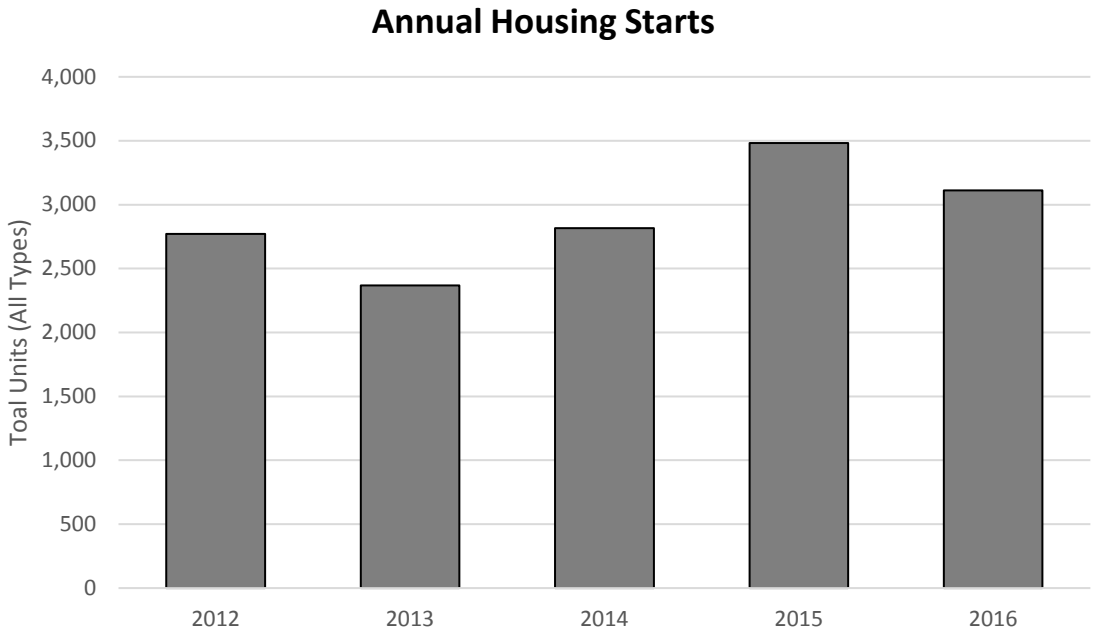
a. In the fourth quarter of 2016, Canadian debt as a percentage of income rose to a new record of 167.3 percent, from an adjusted 166.8 per cent in the third quarter.

b. As interest rates remain low, the household debt service ratio (obligated payments of both principal and interest as a proportion of disposable income) edged down to 14 per cent in the fourth quarter of 2016, from 14.1 per cent in the third quarter.

c. In previous monetary policy reports, the Bank of Canada has cited household debt as a key vulnerability of the Canadian economy.

3.9 Housing Starts

a. In 2016, Durham Region experienced fewer housing starts (3,111 units) compared to 2015 (3,483 units).



b. Meanwhile, year-to-date February 2017 housing starts (741 units) have exceeded year-to-date February 2016 housing starts (399 units) by 86 per cent. This growth is largely attributed to 272 apartment unit starts recorded in Ajax, and 352 single detached unit starts throughout Durham Region.

February Year-to-date Housing Starts

MUNICIPALITY	Detached		Semi-Detached		Town House		Apartment		TOTAL	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Whitby	19	10	0	0	0	32	0	0	19	42
Oshawa	47	114	2	0	50	54	94	0	193	168
Clarington	22	97	0	0	17	0	130	0	169	97
Pickering	14	74	2	0	0	5	0	26	14	105
Ajax	1	20	0	0	0	0	0	272	1	292
Uxbridge	1	30	10	0	0	0	0	0	1	30
Brock	2	4	6	0	0	0	0	0	2	4
Scugog	0	3	0	0	0	0	0	0	0	3
DURHAM REGION	**106**	**352**	**20**	**0**	**67**	**91**	**224**	**298**	**399**	**741**

4. Conclusion

4.1 The Finance Department will continue to monitor the economic environment and relevant indicators as they will impact the current Business Planning process.

Respectfully submitted,

Original Signed By

R.J. Clapp, CPA, CA
Commissioner of Finance

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2564

The Regional Municipality of Durham
Information Report

From:	Commissioner of Planning and Economic Development
Report:	#2017-INFO-38
Date:	March 21, 2017

Subject:

Durham Region Fishing Map

Recommendation:

Receive for information

Report:

1. Purpose

1.1 The Durham Region Fishing Map was produced by the Economic Development and Tourism Division and was designed to assist seasoned and recreational anglers in exploring Durham Region's large and welcoming fishing community.

1.2 This map provides a convenient, user-friendly reference guide of the available fishing locations, launch sites, marinas, important fishing licensing information, and key information about the fish varieties inhabiting Durham Region's bodies of water and the appropriate baits to use.

2. Background

2.1 Durham Tourism produced this map in cooperation Central Counties Tourism, with input from area municipalities, local fishing ambassadors, and the Information Technology Division within the Corporate Services Department.

2.2 The Durham Region Fishing Map also features seasonal fishing information pertaining to the various species that can be found during that time of the year.

2.3 10,000 copies of the Durham Region Fishing Map have been printed and are being distributed to Area Municipalities, marinas, bait shops, and other tourism partners.

2.4 The remaining maps will be distributed via online/telephone visitor requests, community events and industry trade shows.

2.5 From February 24-26, Durham Tourism staff attended the Outdoor Adventure Show in Mississauga where close to 1,000 copies of the map were distributed and promoted.

2.6 A news release announcing the launch of the Durham Region Fishing Map was issued on March 13, 2017, and social media campaigns have begun.

3. Conclusion

3.1 An accessible version of the Durham Region Fishing Map can be viewed online at https://www.durhamtourism.ca/brochures/FishingMap.pdf.

Respectfully submitted,

Original signed by

B.E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2564

The Regional Municipality of Durham
Information Report

From:	Commissioner of Planning and Economic Development
Report:	#2017-INFO-39
Date:	March 22, 2017

Subject:

Investment Attraction Statistics – 3rd and 4th Quarter 2016 and Annual Review 2016

Recommendation:

Receive for information

Report:

1. Purpose

1.1 This report summarizes the investment attraction activity handled by the Economic Development and Tourism Division in the third and fourth quarter of 2016. It also provides an annual review of the investment attraction activities conducted in 2016.

2. Background

2.1 The Economic Development and Tourism Division's investment attraction activities are focused on four areas: investment inquiries; investment missions; investor visits; and in-bound delegations.

3. Third Quarter 2016

3.1 In the third quarter of 2016, the Investment Attraction team handled 51 investment leads.

3.2 Eighteen of these investment leads came directly to the Region or through the Region's overseas investment missions. Thirty three were through a partnership mission with the Ontario Manufacturing Communities Alliance (OMCA). Details of

these inquiries can be found in Appendix 1 of this report.

3.3 The inquiries came from a number of different sectors, the largest being Advanced Manufacturing (31); Manufacturing (12); Digital Technologies (6); and Transportation/Distribution (2).

3.4 In the third quarter of 2016, 2 investment missions were undertaken, one of which was a trade show in Chicago with the OMCA. The Region also undertook its own investment mission to a trade show in Nuremburg, Germany. The purpose of these missions was to identify new investment leads and to create partnerships that will assist the Region in identifying potential investment projects in the future. Details of these missions can be found in Appendix 2 of this report.

3.5 Economic Development and Tourism staff hosted one potential investor for a Familiarization (FAM) tour in the Region. Details of this investor visit can be found in Appendix 3 of this report.

3.6 Economic Development and Tourism staff also hosted one in-bound delegation. Details of this in-bound mission can be found in Appendix 4 of this report.

4. Fourth Quarter 2016

4.1 In the fourth quarter of 2016, the Investment Attraction team handled 36 investment leads.

4.2 All of these investment leads came directly to the Region, or through the Region's investment missions. Details of these inquiries can be found in Appendix 5 of this report.

4.3 The inquiries for this quarter came from a number of different sectors, specifically: Advanced Manufacturing (13); Professional Services (5); Digital Technologies (4); Clean Technology/Renewable Energy (4); Manufacturing (3); Agri-food (3) Real Estate Development (3) and Construction/Infrastructure (1).

4.4 In the fourth quarter of 2016, 3 investment missions were undertaken. The purpose of these missions was to identify new investment leads and to create partnerships that will assist the Region in identifying potential investment projects in the future. In November, the Region participated in the Wuxi Sister City Forum, in Wuxi China, as well as meeting with a number of potential investors. In October, the Region participated in the Think Canada: Global Business Summit, an inbound investment summit, inviting business leaders from around the globe to

learn about how to do business in Canada. The Region and the City of Pickering also shared a booth at the Canadian Aerospace Summit in Ottawa. Details of these missions can be found in Appendix 6 of this report.

4.5 Economic Development and Tourism staff hosted three potential Investors for FAM tours in the Region. Details of these Investor visits can be found in Appendix 7 of this report.

4.6 Economic Development and Tourism staff also hosted three in-bound delegations. Details of these in-bound missions can be found in Appendix 8 of this report.

5. Year End Review 2016

5.1 In 2016, the Investment Attraction team handled 167 investment inquiries.

5.2 Inquiries were referred to staff through a number of difference sources. These include international promotional activities resulting in 129 inquiries, 33 inquiries generated through the Region's participation in the OMCA, with another 5 inquiries coming from other sources. The breakdown of inquiries by source and for each quarter can be found in Appendix 9 of this report.

5.3 The inquiries were spread across a wide range of sectors including Digital Technologies and Advanced Manufacturing accounting for the largest number. Other inquiries came in for Energy & Environment; Professional Services; Agri-Food; Real Estate; Distribution; Infrastructure and Education. The breakdown of inquiries by sector can be found in Appendix 10 of this report.

5.4 In 2016, a total of 8 investment missions were taken to seek potential investors and to create partnerships that will assist the Region in attracting new investment to Durham. Details can be found in Appendix 11 of this report.

5.5 In 2016, Economic Development and Tourism staff hosted 9 investors, undertaking visits to the Region to better understand the potential for their investment plans. Details of these investor visits can be found in Appendix 12 of this report.

5.6 In 2016, Economic Development and Tourism staff participated in and/or coordinated 6 in-bound delegations. These delegations and their outcomes can be found in Appendix 13 of this report.

6. Conclusion

6.1 In the third quarter of 2016, the Investment Attraction team responded to 51 investment inquiries, undertook two investment missions, hosted one company FAM tour, and hosted one in-bound delegation.

6.2 In the fourth quarter of 2016, the Investment Attraction team responded to 36 investment inquiries, undertook three investment missions, hosted three company FAM tours and hosted three in-bound delegations.

6.3 In total, 2016 was a busy year for the Investment Attraction team, responding to 167 investment inquiries; participating in 8 investment missions, hosting 9 company FAM tours, and organizing programs for 6 in-bound delegations.

6.4 The Investment Attraction team continues to deliver its 2017 work plan to promote Durham as a region that is open for business.

Respectfully submitted,

Original signed by

B.E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

Appendix 1: Investment Inquiries (Q3 2016)

Project Name	Date of Inquiry	Source	Project Description
Distribution facility	11/Jul/16	Direct	Distribution company looking for a 30 acre site that is serviced or readily serviced with easy access to 401 or 407. Preference for highway frontage.
O-Ring manufacturer	13/Sep/16	OMCA - IMTS	A leading supplier of precision O-Rings with 80% of their market in Germany. They have customers in the USA and North American expansion is probably 3 years away.
3D inspection robots	13/Sep/16	OMCA - IMTS	A French company specializing in the design and manufacture of 3D inspection software and electronics. Customers are in the automotive and aerospace as well as energy, transportation, construction, agriculture, engineering, medical, consumer goods. US operations are in Missouri. They are looking to expand their North American presence. They are facing immigration issues.
Software	13/Sep/16	OMCA - IMTS	A US based software company that has developed a Sales Resource Planning (SRP) tool that integrates customer, sales professional, factory floor and estimating department in a cloud-based, real-time process. Interested in having a sales office in Canada but not in the foreseeable future.
Diamond tools	13/Sep/16	OMCA - IMTS	A Japanese company that specialize in manufacturing of diamond tools. Have customers in Canada and hopes to expand into Canada in the future. Sales rep in Michigan who covers Canadian market. 90% product imported from Japan. Service and repair is in Ohio.
Industrial abrasives	13/Sep/16	OMCA - IMTS	Manufacturer of high precision industrial abrasive products. Have divisions in Switzerland, the USA, Italy, China, and Hong Kong. Target sectors: automotive, dressing tools, bearings, medical, tool & cutter, semiconductor and photovoltaic. Manufactures in Rhode Island. No immediate interested in opening a facility however would consider finding a sales person.

Tool clamping systems	13/Sep/16	OMCA - IMTS	German manufacturer of tool clamping systems. Subsidiaries in England, Italy, France, India, and the USA. Primary market is the automotive and machine tool industry. Recent experiences (price war) in dealing with distributors in Ontario have made them reconsider their business plans. Potentially looking at warehousing in Canada and possibly direct sales.
Metal cutting machines	13/Sep/16	OMCA - IMTS	German manufacturer of metal cutting machines. Their main markets are: oil and gas, pumps, plastics, energy, aerospace, and heavy machining. Have US office for sales, service and support. No interest in Canada for production or assembly. Mid-term working in the US and will reach out to Canada from there. Seek out distributor however need to train and find right contact.
Machine tool manufacturer	13/Sep/16	OMCA - IMTS	Was founded in 1976 in Michigan, offering a full-service machine tool operation. Provides products and services to a diverse customer base from across the automotive, defense, aerospace, oil and gas, industrial, hydraulic cylinders, plastics, medical device, and metalworking industries. They are interested in Ontario's aerospace sector. Currently they are selling more machines to Mexico. No immediate Ontario/Canada expansion plans.
Brushing and polishing machines	13/Sep/16	OMCA - IMTS	A Swiss company that has become one of the world's leading manufacturers of high-precision brushing/polishing machines for ultra-hard materials. Corporate has no interest in moving any operations out of Switzerland. North American Sales Manager has some interest in expanding sales in Ontario. Requires cost comparison between doing business in US/CDN particularly for sales offices or service centre operations.

High precision CNC machines	14/Sep/16	OMCA - IMTS	German company that develops and manufactures high-precision CNC machining centres. Primarily used in the fields of tool and die/mold making, automotive, dental equipment, medical equipment, high frequency technology, watchmaking and jewelry as well as for research and development.
Machine tool manufacturer	14/Sep/16	OMCA - IMTS	Swiss company that manufacture machine tools, producing innovative machine tools for the automotive, watchmaking, medical and dental industries. Considering Canada as expansion market.
Production lines	14/Sep/16	OMCA - IMTS	German company that manufacture a range of finishing lines, from specialized machine tools to production lines for the transformer industry. They have more than 400 employees in Germany as well as further affiliates and joint ventures in China, UK, USA, India and Russia.
Production lines	14/Sep/16	OMCA - IMTS	German company that develop, manufacture and service production systems for electrochemical machining. The company is a leader in the development and production of complex ECM/PECM system solutions, including integrated technologies such as fixture engineering, automation and cleaning processes.
Water treatment systems	14/Sep/16	OMCA - IMTS	Company design, construct and service customized wastewater treatment system for industrial uses. They offer solutions for a range of industries including aerospace, aluminum anodizing, paper processing, chemical, food, and the microelectronics and semiconductor industry. Just opened a facility in Mexico and are interested in the Canadian/Ontario market. Work for Chrysler in Canada; other customers include GM, L'Oreal, and Avon.

Software	14/Sep/16	OMCA - IMTS	Provides software products and services for the advanced manufacturing markets of semiconductor, solar, electronics and medical devices. Their software has been deployed in several advanced manufacturing facilities world-wide, including Germany, USA, China, Taiwan and Russia. Focused in Asia, but interested in Canada.
Cutting tools	14/Sep/16	OMCA - IMTS	Manufacturer of industrial cutting tools made from high speed steel, cobalt steel and carbide. Have a sales rep covering in Canada. Have no immediate plans to expand company into Canada. Material produced in US and owned by Korean company.
CNC Manufacturer	14/Sep/16	OMCA - IMTS	German company that is a global CNC manufacturer. Primary industries include automotive, machine building industry, contract manufacturers, power engineering, mould and die manufacturers as well as aerospace companies. Have a production facility in US. Set up a sales/service team in Mexico and 1.5 years ago, recently opened a small manufacturing facility there. Currently no presence in Canada but wants one and are looking at how they break into the market. Canada is not a priority but could see sales and service office in the future if sales warrant.
Industrial tools	14/Sep/16	OMCA - IMTS	A US distributor of industrial tools. They bring their knowledge and experience in inventory management, cutting tool technology, process improvement, manufacturing and machining. They represent all major manufacturers. The company also provide staffing and recruitment services.

Metal based 3D printing	14/Sep/16	OMCA - IMTS	German company that is a leading provider of metal-based additive manufacturing technology ("3D printing"). Currently employs over 300 in Germany, the USA, Singapore, Russia and China. The products are utilized worldwide by customers in the aerospace, energy, healthcare and automotive industries.
Quality control software	14/Sep/16	OMCA - IMTS	A US company that provides manufacturing quality software and service offering simulation tools for CAD simulation and quality inspection data mining. Ontario would be a market the company would look into. Main interest is in automotive, aerospace, electronics.
Electrical discharge machines	15/Sep/16	OMCA - IMTS	US manufacturer of electrical discharge machines. Currently 70% of their business in Ontario is located in Southwestern Ontario servicing the mold shops. They have one truck daily that crosses the border into Ontario. They are looking at opportunities to establish a physical presence in Ontario because they are losing business due to difficulties crossing the border.
Fire Suppression systems	15/Sep/16	OMCA - IMTS	A global innovator and manufacturer of industry leading pre-engineered fire suppression systems. The company's product serves general manufacturing equipment. Current issues in doing business with Canada: the product classifies as a dangerous good (importing), exchange rate fluctuations, and requires increasing sales. Potential business case for establishing a physical presence in Canada particularly a depo/ sub assembly which fills their cylinders.
Industrial lubricants	15/Sep/16	OMCA - IMTS	A German company that is an industrial lubricant specialist. Conducts a lot of R&D with companies and universities. Broke ground in new facility in US back in June, unlikely any physical expansion. They require sales rep/ distributor in Canada currently few customers in Canada.

3D manufacturing systems	15/Sep/16	OMCA - IMTS	The company is a leader in the field of 3D additive manufacturing systems. Their aerosol jet printers are used in the development and fabrication of next generation microelectronic devices. Following up to arrange a conference call with CEO at a later date.
Enterprise Resource Planning software	15/Sep/16	OMCA - IMTS	Company is a leader in providing manufacturing ERP (Enterprise Resource Planning) software for small to mid-sized companies who are looking to increase efficiency. Recently have had 3 inquiries for their product from Ontario. Their distributor that services Ontario is located in Boston.
Industrial machines	15/Sep/16	OMCA - IMTS	A family-run mechanical engineering company that develop and manufacture industrial machines. They employ 220 R&D engineers around the globe and operate production facilities in Switzerland, Germany and Hungary. Target industries include automotive, commercial vehicle and aircraft industries, shipbuilding, the wind-power industry, and general gear manufacturing. US operations include sales, service, and spare parts. They have many machines operating in Ontario. Currently facing border issues with their service technicians; they are spending $25-$30k in legal fees for immigration purposes. Considering a sales office/ service centre.
Precision spindles and slides	15/Sep/16	OMCA - IMTS	Company is a leader in the design, manufacture & service of high performance precision spindles and slides. Their products are used worldwide in a large variety of industries; including automotive, aerospace, construction, die/mold, cabling and winding, plastics, woodworking, stone cutting and general metalworking industries. Sees Canada as their biggest opportunity. Looking for new sales opportunities. Supplies mold shops in Ontario.

Industrial machines	15/Sep/16	OMCA - IMTS	Company produce bevel and cylindrical gear manufacturing machines found in automobiles, airplanes, trucks, tractors, wind turbines, lawn mowers and even power tools. With customers on almost every continent and locations in over 25 countries. Company has an office in London, ON. Would be open to learn more about the R&D done in the province. Facing immigration issues on the border with their service technicians.
Precision machine tools	15/Sep/16	OMCA - IMTS	A medium-sized German manufacturer of large precision machine tools. They are a key supplier of large component machines for diesel engine manufacturers, power generation industry, machine tool builders, construction industry, printing press manufacturers and defense suppliers. US office is in Pennsylvania. No immediate expansion plans in Canada, but would be interested in the market as big part of their business is on automotive mould & dye.
Precision hole-making machinery	15/Sep/16	OMCA - IMTS	Company provides precision hole-making technologies with the highest level of drill performance for end users worldwide. Company devotes advanced engineering and manufacturing capabilities to create the widest selection of value-added tooling available to metal-cutting industries around the world.
Tube processing	15/Sep/16	OMCA - IMTS	An Italian company that is a global leader in tube processing, from laser cutting to cold saw, bending, end-forming, measurement, with a worldwide presence. The company has more than 500 employees, with 3 facilities in Italy.
Gear manufacturing machinery	15/Sep/16	OMCA - IMTS	A US machine tool manufacturer specializing in gear manufacturing machinery and specialty machines. Manufacture for many well-known, American-machine tool manufacturers. Interested in exploring Ontario market.

Inspection equipment	15/Sep/16	OMCA - IMTS	US based manufacturer of precision inspection equipment and measuring devices. Principal customers include oilfield equipment, and automotive manufacturers, as well as general machining companies. Looking for distributor in Canada.
Hot melt systems	27/Sep/16	Direct - FachPack	A family owned German manufacturer of bonding systems, particularly hot melt systems in which they are a leader in Europe. They offer a broad range of hot melt adhesives including the adequate applicator tools and accessories, a unique combination in Europe. Target markets are packaging, construction, automotive and textile industries. Looking for a distributor.
Tool and material handling systems	27/Sep/16	Direct - FachPack	A Swiss company that manufactures modular tool and material-handling for cutting systems. All machines are built to order. 60% of sales is in EU, 30% in North America and 10% ROW. US office is in Wisconsin and employs about 50 people. They sell approximately 20 machines per year in the US and Canada. Main markets are: graphics industry, packaging, leather and textiles.
Auto interiors	27/Sep/16	Direct - FachPack	A Spanish company focused on producing vehicle's interior components, such as interior trims, instrument panels, plastic components for seats, consoles. They also have a packaging business which specializes in plastic shipping containers for auto parts. There is a competitor in the US, but their patent is about to expire. They are establishing an office in Detroit and a manufacturing plant in Mexico, the shipping container unit will be part of this North American growth. Will get their US business development rep to contact us.

Graphic Supplies	27/Sep/16	Direct - FachPack	German company that produces graphic supplies for flexo and offset printing technologies, mainly seals for flexo-printing, blades, wash blades and filters for offset printing. Main sales are in EU but US market is growing and they expect that they will need to have an operation in North America in the next 5 years.
Robots	27/Sep/16	Direct - FachPack	The company make robots that are used in rapid top loading processes. Built without any operating system and work on all common machine control systems, makes real-time information available. Europe is their main market, about 70%, China is about 20% and the US 10%. They would like to see the US be as big as the EU in terms of sales volumes.
Software	27/Sep/16	Direct - FachPack	German technology company that produce and sell enterprise resource planning software for packaging industry. The company are still very small, 12 employees, and all of their sales are in Europe. Know very little about North America, want information on Ontario and Durham packaging industry.
Plastic pallets	27/Sep/16	Direct - FachPack	Design and manufacture a wide range of plastic pallets from recycled material. Their main markets are food, automotive, retail and pharmaceuticals. They have a distributor in the US, but are also active in New Zealand, South Africa and Guatemala. These are very low volumes and use their own designs. Looking for local partners to manufacture, like an injection moulding company.
Polyethylene films	28/Sep/16	Direct - FachPack	A Turkish company that produces multi-layer polyethylene films for printing and lamination. Part of a larger group which is integrated into flexible packaging solutions. Currently not exporting their products to the US but feel that they may be investing there in the near future. They have already been approached by the State of Virginia who are offering incentives.

Printed corrugated cardboard	28/Sep/16	Direct - FachPack	German company that is at the forefront of the European market for high-quality preprinted corrugated cardboard packaging. The company has two of the largest and most modern flexographic printing presses in the world. Major customers are driving expansion they are looking at the US to decide if they open a plant or have strategic partnership.
Surface protection nets	28/Sep/16	Direct - FachPack	German company that develop and manufacture surface protection nets and spacer grids for a wide range of uses. Largest customers are in the automotive industry that uses to protect metal parts when they are being transported. All production is in Germany and they export worldwide. They have also produced a plastic gutter guard for domestic use and are interested in how to get this into retail chains in North America.
Packaging machinery	28/Sep/16	Direct - FachPack	Belgian company that produced plastic "staple" machines for Avery Dennison in the EU market, also imports and supplies plastic staples in EU. They are currently busy meeting demand in Germany that they have not really considered North America.
Pouch manufacturing machines	28/Sep/16	Direct - FachPack	German company that manufactures flexible packaging systems for companies all over the world for diverse sectors, such as the food, pet food, pharmaceutical, or chemical industry. Have had a rep in US but are now investigating setting up their own facility, likely to be sales, service, and spare parts. Have been looking at the Chicago area where they have strong relationships with co-packers.

Maple syrup packaging	28/Sep/16	Direct - FachPack	An Austrian packaging company that have developed a metal packaging that would be used in the maple syrup market. Have been to Canada number of times and understand that the main problem will be that there are a large number of very small producers. Would ideally also like to import some of the product to Europe as well. Would be looking for a warehouse space and connection to distributors who could take their packaging solution to market.
Food packaging	28/Sep/16	Direct - FachPack	Austrian company focused on board and corrugated wave for displays, leaflets and outsets, traditional printing and flexible packaging out of composites. Main market is for food packaging. Are looking for an agent or distributor in North America. Not considering production at this stage.
Compliance technology	28/Sep/16	Direct - FachPack	An Irish company founded in 2012, are a leading edge technology solution provider, specialising in the development of serialisation track and trace systems, incorporating anti-counterfeit and patient compliance end-to-end solutions. Focused on the food and pharmaceutical industry. Have some work in the US; Canada is piecemeal.
High barrier PE films	28/Sep/16	Direct - FachPack	A Turkish company that produces high barrier polyethylene films for foods that have long shelf life (i.e. meats, cheeses, fish). Also convertors for flexo-printing laminating. They have customers in New Jersey who buy through a distributor in the US. No immediate plans for Canada.
Leaflet printing	28/Sep/16	Direct - FachPack	A family owned German company that specialized in the production of package leaflets and usage information. They operate across a wide range of industries, including pharmaceutical, cosmetics and chemical industries, as well as from medical device technology. 70%-80% of their business is in pharmaceutical in Europe. North America is of interest.

Appendix 2: Investment Missions (Q3 2016)

Mission	Purpose	Partner	Leads	Prospects
International Technology Manufacturing Show (Chicago)	Investment	OMCA	33	4
FachPack (Nuremburg)	Investment	None	17	3

Appendix 3: Investor Visits (Q3 2016)

Company	Month	Outline Program	Outcome
Chinese Investors	August	Meetings with a Durham company regarding potential capital investment that would accelerate the development of new technology; resulting in a new Durham facility and new employees.	Deal closed resulting in a new 25,000 sq. ft. facility as companies new World Headquarters and 60 new jobs.

Appendix 4: Inbound Delegations (Q3 2016)

Delegation	Month	Purpose	Outcome
Mexican Trade Commission	September	Introduction to trade and investment commissioners from ProMexico and representatives from Coahuila municipal government.	Development of closer relationship with Toronto based Mexican trade and investment office and Coahuila municipality.

Appendix 5: Investment Inquiries (Q4 2016)

Project Name	Date of Inquiry	Source	Project Description
Real estate development	19/Oct/16	Direct - Think Canada	Philippines based real estate investment company that specializes in buying, selling and developing real estate. Business activities are primarily in the Philippines, but they are looking for opportunities and have already invested in one property in Alberta.
Large scale infrastructure	19/Oct/16	Direct - Think Canada	Construction company with headquarters in Greece which has offices and projects in 43 countries. Work on large infrastructure projects, transportation and in addition to construction they also do some project management and financing. Are interested in getting involved in Ontario/Canada and want information on public sector procurement.
Corporate sales training	19/Oct/16	Direct - Think Canada	French company that provide sales and management training to large corporations through e-learning, face to face and on the job training. They are looking to hire consultants to provide the training and at some point they will need an office.
Legal services	19/Oct/16	Direct - Think Canada	Chinese lawyer looking to help Chinese investors and companies go international. Works closely with the Chinese government. Wants to understand local markets and is interested in visiting Durham to understand the investment opportunities here.
Green energy	19/Oct/16	Direct - Think Canada	Manufacturer of technology for generation of power such as wind, solar, biomass and water. Company is looking for a distributor and is interested in connections to small scale renewable projects. Would consider an office and in the longer term production in Ontario.

Software engineering	19/Oct/16	Direct - Think Canada	Engineering and design for companies in the auto sector. Company has 215 employees with a 30% growth last year. They are looking for companies that create prototypes and utilize visual/sounds merged into virtual reality to simulate and improve their design. They are looking to partner with companies in developing a design centre.
Snack manufacturer	19/Oct/16	Direct - Think Canada	Manufacturer of sesame seed products and pasta shaped snacks from potato products. Would like to have a business in Canada and would be willing to do a joint venture or partnership. They are also willing to make an investment with the right partner.
Software	19/Oct/16	Direct - Think Canada	Brazilian company that provide an online therapy service. Already living in Ontario and has opened a business here. May be interested in attending the Touchdown program.
Farming exports	19/Oct/16	Direct - Think Canada	Agricultural products company operating in swine and plantation operations looking at expanding on the agricultural side by buying farms in Ontario. Looking for products to export/import and looking for opportunities to pick up a new business or develop a new venture.
Dried fruit	19/Oct/16	Direct - Think Canada	Dried fruit producer looking for access to main stream supermarkets. Currently ships to Europe and the US. Considering a sales/marketing and trading office once they have established business.
Real estate Investment	19/Oct/16	Direct - Think Canada	A multidisciplinary company involved in logistics and transportation, energy, IT and health services. Are looking for real estate investment opportunities in Ontario.

Engineered plastics	31/Oct/16	Direct - China Mission	Chinese company that make engineered plastic parts primarily for the automotive sector. Majority of sales are in China (85%), other main market is Europe but want to start to sell in the US. Are looking at setting up a sales office in Detroit in 2017 and if sales volumes warrant it they will move into production. Interested in cost of labour and electricity, water and gas in Ontario compared to US
Biogas facilities	31/Oct/16	Direct - China Mission	An electricity generation company that is building biogas projects in China. They are expecting to expand internationally and want to build 50 biogas plants around the world. Have had contact with Provincial representatives and discussed Ontario. Interested in understanding the long term demand for renewables in Ontario, particularly biogas.
Industrial mixers	31/Oct/16	Direct - China Mission	Manufacturer of industrial mixers for the pharmaceutical and food industry. The company currently only sells in China. Would be interested in selling his product in Canada, may set up a sales office.
Bearing manufacturer	31/Oct/16	Direct - China Mission	Manufacturer of miniature bearings used in power tools. Have been supplying well-known brands in the US. All products are manufactured in China but they could open a manufacturing facility in Canada to serve North America. Interested in incentives.
Laser marking systems	31/Oct/16	Direct - China Mission	Manufacturer of laser marking systems used in automotive and food industry. The company is 4 years old with 50 employees and RMB20M in revenue. Sales are mainly in Australia, Korea, Thailand and Japan. Are starting to sell in the US. Sales have mainly been through ecommerce. Considering a sales office in Canada.
Smart City Applications	31/Oct/16	Direct - China Mission	Produce a traffic control technology systems for smart city applications. Currently going through an IPO in China which will give them capital to expand into North America. Looking at different business models including an equity partner in a local company.

Testing equipment	31/Oct/16	Direct - China Mission	Manufacturer ofsupply testing equipment. Primarily focused on testing of food, soil and water. Are looking for a local Canadian company to partner with.
Live action animation	31/Oct/16	Direct - China Mission	A film company that is focused on live action animation and post production. Aware production costs are lower in Canada. May set up a sales office within the next 2 years.
Plastics recycling	1/Nov/16	Direct - China Mission	Company takes post-consumer plastic bottles and recycles them into chemical and synthetic fibres. Most of their product is exported to Europe and Asia. Currently buying their plastics from exporters who are bringing in from Europe and Southeast Asia. Are interested in getting a supply from Canada and shipping themselves to their facility.
Precision plastic injection	1/Nov/16	Direct - China Mission	Precision injection molding of plastics. They manufacture everything from tool boxes to parts for power tools to security tags for clothes. Most of their products (70-80%) are exported to the US, Mexico and Germany. Would consider any type of investment (M&A, acquisition, equity partner, own facility)
Welding & cutting machines	1/Nov/16	Direct - China Mission	Manufacturer of welding and cutting machines for many different industries. One of their key customers is the automotive sector. They began exporting to Germany 10 years ago and are interested in increasing their North America sales. There are competitors in the US and EU but their prise is 3x higher and quality is the same. Looking at an office for sales and after sales support, probably in 2 years.
Renewable Energy projects	1/Nov/16	Direct - China Mission	China's largest company in the new energy field, focused on solar, wind and energy storage. Currently undertaking projects in Taiwan, US, Singapore, India and Canada. In the US they have 3 power stations. They invest, construct and operate power facilities. Is looking for opportunities for solar or biomass facilities in the US$ 5-6 B range.

Pressurized tanks	1/Nov/16	Direct - China Mission	Company has two lines of business: pressurized tanks for the petrochemical industry and sorting machines for the mining industry. Mainly interested in bringing the pressurized tanks to North America. Looking for customers and will then consider an office.
Solar PV panels	1/Nov/16	Direct - China Mission	Manufacturer of solar PV panels. They have a capacity to manufacture 400MW per year. In 2017 they are supplying a 100MW facility in Pakistan. Are interested in understanding the local market for solar systems and any government policies on solar energy.
Custom packaging	15/Nov/16	Direct - Aerospace Summit	Custom packaging for aerospace, automotive, electronics, manufacturing and furniture based in Kitchener. Looking for business development opportunities in the aerospace sector.
Machine manufacturer	15/Nov/16	Direct - Aerospace Summit	Manufacturer of large CNC machines used in the aerospace industry. Their office is based in Detroit and they are part of a Spanish group. They would like an introduction to Noranco and any other aerospace companies in Durham.
Smart energy construction	15/Nov/16	Direct - Aerospace Summit	Design-build firm offering turnkey construction and retrofit projects focused on improved energy efficiency in buildings. Company has 150 employees in 5 offices with four primary markets. Currently working with Lakeridge Health, reducing their energy bill by 22% and generating a guaranteed energy savings of $1.4 M. They are looking to undertake similar projects in Durham.
Electronics development	15/Nov/16	Direct - Aerospace Summit	Electronic product development and consulting company which works on product development projects in the areas of: system architecture and design; hardware design; simulations; firmware design; test engineering; etc. They work in communications, broadcast video, defence and security, aerospace and semiconductor market sectors and are interested in potential clients in Durham.

Technical Services	15/Nov/16	Direct - Aerospace Summit	A US company that is a single-source solution, providing machine tools, engineering services, tooling, supplies, application support and customer service. They are looking for contacts in the automotive and aerospace industry.
Wire and cable	15/Nov/16	Direct - Aerospace Summit	Based in Oklahoma, this company is a leading global distributor of interconnect, electromechanical and wire, cable and harness assembly products. Looking for customers in Ontario.
Real Estate Development	15/Nov/16	Direct - Aerospace Summit	Based in Mississauga with a branch in India, this company is a charter flight broker. They are also involved in aviation financing and management consultation and development. They are interested in developing land in Durham.
Aerospace consulting	15/Nov/16	Direct - Aerospace Summit	B2B sales training and marketing strategy consulting services focused on the aerospace industry. Interested in a list of aerospace companies in Durham.
Aviation design	15/Nov/16	Direct - Aerospace Summit	Company provides innovative solutions in both aerospace and industrial distribution segments.. They have a global footprint with office in USA, but nothing in Canada.
Hybrid aircraft	15/Nov/16	Direct - Aerospace Summit	UK based company with hybrid aircraft operations used in mining and remote locations. They work with Lockheed in California. Interested in exploring the market opportunity for their aircraft in Canada.
Non-destructive testing	30/Nov/16	Direct	Canadian company headquartered in Quebec City seeking support in expanding their operation into Durham Region. They are a professional services, engineering and inspection company currently serving customers in Durham. Have a contract with Darlington Nuclear as part of the refurbishment project.

Appendix 6: Investment Missions (Q4 2016)

Mission	Purpose	Partner	Leads	Prospects
Think Canada (Niagara Falls)	Investment	None	11	3
China Mission (Wuxi, Yixing, Nanjing)	Investment	None	14	3
Canadian Aerospace Summit	Investment	City of Pickering	10	2

Appendix 7: Investor Visits (Q4 2016)

Company	Month	Outline Program	Outcome
Chinese lawyer	October	One day tour of Region, including Spark Centre, Centre for Food, ACE, Seaton, Oshawa Marina	Have a number of clients looking for investment opportunities. Will be promoting Durham as a potential location. Follow up when next in China.
Batteries for Electric Buses	October	Meeting with Regional Chair, Durham Region Transit, UOIT (Research Chair Electrical Energy Storage), tour of ACE	Region met this company in China in 2012. In 2016, company signed an MOU with UOIT for joint R&D Centre for their specific batteries. End goal is for the company to open manufacturing facility in Durham.
Chinese investor	December	Meeting with City of Oshawa to discuss Oshawa Marina development.	Investor submitted an Expression of Interest to City of Oshawa regarding the development and management of the Oshawa Marina.

Appendix 8: Inbound Delegations (Q4 2016)

Delegation	**Month**	**Purpose**	**Outcome**
Shanxi Province	November	Introduction to Durham Region and Shanxi Province	Consider visit to Shanxi on a future mission.
Beijing Future Science Park (Changping)	November	To discuss cooperation between high-tech enterprises in Durham Region and Beijing Future Science Park, and to discuss cooperation with Spark Center.	Developing an MOU between Beijing Future Science Park and Spark Centre.
Wuxi Municipal Hospitals	December	Visit the Durham Regional Cancer Centre and LHERN to understanding more about Canadian health systems and to look for areas of cooperation.	Continue to follow up with Wuxi Foreign Affairs Office to identify areas of cooperation.

Appendix 9: Investment Inquiries by Source and Quarter (Year End 2016)

Inquiry Source	Q1	Q2	Q3	Q4	Total
Direct	22	53	18	36	129
Partnerships	0	0	33	0	33
Other	2	3	0	0	5
Total	24	56	51	36	167

Appendix 10: Investment Inquiries by Sector (Year End 2016)

Sector	**# of Inquiries**	**% of Inquiries**
Digital Technologies	53	31.7%
Advanced Manufacturing	50	29.9%
Manufacturing	24	14.4%
Energy & Environment	13	7.8%
Professional Services	8	4.8%
Agri-Food	6	3.6%
Real Estate	6	3.6%
Distribution	4	2.4%
Infrastructure	2	1.2%
Education	1	0.6%

Appendix 11: Investment Missions (Year End 2016)

Mission	**Purpose**	**Partner**	**Leads**	**Prospects**
Investment Mission to Boulder/Denver	Investment	None	19	3
Investment Mission to China (Wuxi)	Investment	None	13	3
Investment Mission to Brazil (Porto Alegre, Recife, Rio de Janeiro)	Investment	None	33	6
International Technology Manufacturing Show (Chicago)	Investment	OMCA	33	4

FachPack (Nuremburg)	Investment	None	17	3
Think Canada (Niagara Falls)	Investment	None	11	3
China Mission (Wuxi, Yixing, Nanjing)	Investment	None	14	3
Canadian Aerospace Summit	Investment	City of Pickering	10	2

Appendix 12: Investor Visits (Year End 2016)

Company	**Month**	**Outline Program**	**Outcome**
Brazilian Technology Company	January	Spark Centre, Durham College Media Art & Design, UOIT Business & Information Technology faculty, introduced to three local technology companies and a local realtor	Company participating in Spark Centre training program and anticipates opening an office in Durham by year end
Germany Packaging Company	February	Presentation on Regional Agriculture & food sector, Employment Ontario, UOIT, DC Integrated Manufacturing Centre, Corporate Finance advisor, meetings with two local companies	Company has indicated that they will be establishing a sales office in Durham by the end of 2017
Chinese Greenhouse Operator	March	Meetings with OMAFRA, Ontario Greenhouse Growers Association, local greenhouse operator, Ontario Food Terminal and viewed 3 sites/properties	Company is working on a business plan for the Ontario market

Brazilian Technology Companies – Spark Centre Touchdown Program	June	Five Brazilian companies participated in the Spark Centre's Touchdown program. Given one week's training on how to establish a business in Ontario. Also had a one day tour of Durham	One company will be looking to establish their business by the end of 2017, another two will be returning in the Fall of 2017 to do more market research, with the intension of setting up their businesses in Durham in 2017.
Brazilian eHealth Company	July	UOIT and their National Research Chair on Health Informatics, IRAP representative, Spark Centre, Ontario Centers of Excellence, eHealth Ontario	Company has indicated that they will be coming back to Canada in the Fall of 2017 and hope to have established an office in 2017, Durham will be considered.
Chinese Investors	August	Meetings with a Durham company regarding potential capital investment that would accelerate the development of new technology; resulting in a new Durham facility and more employees.	Discussions are ongoing with potential meeting in China with the investor. If investment happens it will result in a new 25,000 sq. ft. facility and 60 new jobs.
Chinese lawyer	October	One day tour of Region, including Spark Centre, Centre for Food, ACE, Seaton, Oshawa Marina	Has a number of clients looking for investment opportunities. Will be promoting Durham as a potential location. Follow up when next in China.

Batteries for Electric Buses	October	Meeting with Regional Chair, Durham Region Transit, UOIT (Research Chair Electrical Energy Storage), tour of ACE	Have met this company in China and been speaking to this company for a number of years. This visit was by their Chairman. Are working with UOIT and National Research Chair on an MOU to conduct research and testing of their batteries.
Chinese investor	December	Meeting with City of Oshawa to discuss Oshawa Marina development.	Investor is likely to be submitting an Expression of Interest to City of Oshawa regarding the development and management of the Oshawa Marina.

Appendix 13: In-bound Delegations (Year End 2016)

Delegation	**Month**	**Purpose**	**Outcome**
Consuls General, Turkey, Sri Lanka, Afghanistan, Pakistan	January	Presentation to 4 Consuls General and staff about investment opportunities in Durham Region.	Working with each office on follow up meetings to discuss greater collaboration on trade and investment.
Softex Recife Mission to Canada	July	Following meetings in Brazil in June, Softex Recife changed their plans and spent a day in Durham Region. Four companies participated in the program and were toured around the region.	Working with Softex to discuss greater collaboration and speaking to one of the companies about their investment plans.

Mexican Trade Commission	September	Introduction to Trade and Investment Commissioners from ProMexico and representatives from Coahuila municipal government.	Development of closer relationship with Toronto based Mexican trade and investment office and Coahuila municipality.
Shanxi Province	November	Introduction to Durham Region and Shanxi Province	Consider visit to Shanxi on a future mission.
Beijing Future Science Park (Changping)	November	To discuss cooperation between high-tech enterprises in Durham Region and Beijing Future Science Park, and to discuss cooperation with Spark Center.	Developing an MOU between Beijing Future Science Park and Spark Centre.
Wuxi Municipal Hospitals	December	Visit the Durham Regional Cancer Centre and LHEARN to understanding more about Canadian health systems and to look for areas of cooperation.	Continue to follow up with Wuxi Foreign Affairs Office to identify areas of cooperation.

Interoffice Memorandum

Date: **March 24, 2017**

To: **Committee of the Whole**

From: **Dr. Robert Kyle**

Health
Department

Subject: **2016 Year-End Indicator Summary Tables**

In accordance with the Public Health Funding and Accountability Agreement, the 2016 Year-End Health Promotion and Health Protection Indicators Summary Tables for the Durham Region Health Department are attached.

Respectfully submitted,

Original signed by

R.J. Kyle, BSc, MD, MHSc, CCFP, FRCPC, FACPM
Commissioner & Medical Officer of Health

2016 YEAR-END INDICATOR SUMMARY TABLE: HEALTH PROMOTION INDICATORS

Board of Health for the Durham Region Health Department

March-20-17

#	Indicator		Baseline		2015			2016							
								Mid-Year		Year-End					
			Reporting Period	Performance	Reporting Period	Performance	Target	Reporting Period	Performance	Reporting Period	Numerator	Denominator	Performance	Target/ Monitoring	Performance/ Compliance Report Required
1.1	% of population (19+) that exceeds the Low-Risk Alcohol Drinking Guidelines		2013 + 2014	29.5%										Monitoring	N/A
1.2	Fall-related emergency visits in older adults aged 65 +		2009	5,658										Monitoring	N/A
1.3	% of youth (ages 12 - 18) who have never smoked a whole cigarette		2009 + 2010	85.7%										Monitoring	N/A
1.4	% of tobacco vendors in compliance with youth access legislation at the time of last inspection		2011	95.0%	Jan 1, 2015 - Dec 31, 2015	93.5%	≥90%	Jan 1, 2016 - Jun 30, 2016	95.3%	Jan 1, 2016 - Dec 31, 2016	376	393	95.7%	≥90%	TBD
1.5	% of secondary schools inspected once per year for compliance with section 10 of the Smoke-Free Ontario Act (SFOA)		2014	100.0%	Jan 1, 2015 - Dec 31, 2015	100.0%	100.0%			Jan 1, 2016 - Dec 31, 2016	46	46	100.0%	100.0%	TBD
1.6	% tobacco retailers inspected for compliance with section 3 of the Smoke-Free Ontario Act (SFOA)	Non-Seasonal	2013	87.6%	Jan 1, 2015 - Dec 31, 2015	98.2%	100.0%			Jan 1, 2016 - Dec 31, 2016	388	388	100.0%	100.0%	TBD
		Seasonal	2013	N/A	Jan 1, 2015 - Dec 31, 2015	0.0%	100.0%			Jan 1, 2016 - Dec 31, 2016	N/A	N/A	N/A	N/A	N/A
1.7	% tobacco retailers inspected for compliance with display, handling and promotion sections of the Smoke-Free Ontario Act (SFOA)		2013	87.6%	Jan 1, 2015 - Dec 31, 2015	99.5%	100.0%			Jan 1, 2016 - Dec 31, 2016	397	397	100.0%	100.0%	TBD
1.8	Oral health Assessment and Surveillance: % of schools screened		Jul 2013 - Jun 2014	100.0%	Jul 1, 2014 - Jun 30, 2015	100.0%	100.0%	Jul 1, 2015- Jun 30, 2016	100.0%					100.0%	NO
	Oral health Assessment and Surveillance: % of all JK, SK and Grade 2 students screened in all publicly funded schools		Jul 2013 - Jun 2014	100.0%	Jul 1, 2014 - Jun 30, 2015	100.0%	100.0%	Jul 1, 2015- Jun 30, 2016	100.0%					100.0%	
1.9	Implementation status of NutriSTEP® Preschool Screen		2013	Initiation	Jan 1, 2015 - Dec 31, 2015	Intermediate	Intermediate	Jan 1, 2016 - Jun 30, 2016	Intermediate	Jan 1, 2016 - Dec 31, 2016	Advanced			Advanced	TBD
1.10	Baby-Friendly Initiative (BFI) Status		2011	Preliminary	Jan 1, 2015 - Dec 31, 2015	Designated	Designated	Jan 1, 2016 - Jun 30, 2016	Designated	Jan 1, 2016 - Dec 31, 2016	Designated			Designated	TBD

LEGEND:

No data/ no report required for specified reporting period.

N/A Not applicable for specified reporting period.

2016 YEAR-END INDICATOR SUMMARY TABLE: HEALTH PROTECTION INDICATORS

Board of Health for the Durham Region Health Department

20/Mar/17

#	Indicator	2015				2016					
		Reporting Period	Performance	Target (%)/ Monitoring/ Baseline	Performance/ Compliance Report	Reporting Period	Numerator	Denominator	Performance	Target (%)/ Monitoring/ Baseline	Performance/ Compliance Report Required
2.1	**% of high-risk food premises inspected once every 4 months while in operation**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	815	815	100.0%	Monitoring	TBD
2.2	**% of moderate-risk food premises inspected once every 6 months while in operation**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	1,192	1,192	100.0%	Monitoring	TBD
2.3	**% of Class A pools inspected while in operation**	Jan 1, 2015 - Dec 31, 2015	100.0%	100.0%	NO	Jan 1, 2016 - Dec 31, 2016	33	33	100.0%	Monitoring	TBD
2.4	**% of high-risk Small Drinking Water Systems (SDWS) inspections completed for those that are due for re-inspection**	Jan 1, 2015 - Dec 31, 2015	100.0%	100.0%	NO	Jan 1, 2016 - Dec 31, 2016	N/A	N/A	N/A	N/A	N/A
2.5	**% of public spas inspected while in operation**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	41	41	100.0%	Monitoring	TBD
2.6	**% of restaurants with a Certified Food Handler (CFH) on site at time of routine inspection**	N/A	N/A	N/A	N/A	Jan 1, 2016 - Dec 31, 2016	1,440	2,395	60.1%	Baseline	TBD
3.1	**% of personal services settings inspected annually**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	705	710	99.3%	Monitoring	TBD
3.2	**% of suspected rabies exposures reported with investigation initiated within one day of public health unit notification**	Jan 1, 2015 - Dec 31, 2015	95.0%	100.0%	YES	Jan 1, 2016 - Dec 31, 2016	1,321	1,325	99.7%	100.0%	TBD
3.3	**% of confirmed gonorrhea cases where initiation of follow-up occurred within two business days**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	274	275	99.6%	Monitoring	TBD
3.4	**% of confirmed iGAS cases where initiation of follow-up occurred on the same day as receipt of lab confirmation of a positive case**	Jan 1, 2015 - Dec 31, 2015	100.0%	Monitoring	NO	Jan 1, 2016 - Dec 31, 2016	36	36	100.0%	Monitoring	TBD
3.5	**% of salmonellosis cases where one or more risk factor(s) other than "Unknown" was entered into iPHIS**	Jan 1, 2015 - Dec 31, 2015	77.1%	100.0%	YES	Jan 1, 2016 - Dec 31, 2016	161	180	89.4%	100.0%	TBD
3.6	**% of confirmed gonorrhea cases treated according to recommended Ontario treatment guidelines**	Jan 1, 2015 - Dec 31, 2015	68.0%	Baseline	N/A	Jan 1, 2016 - Dec 31, 2016	203	275	73.8%	Monitoring	TBD
4.1	**% of HPV vaccine wasted that is stored/administered by the public health unit**	Sep 1, 2014 - Aug 31, 2015	0.0%	0.2%	NO	Sep 1, 2015 - Aug 31, 2016	11	6,172	0.2%	Monitoring	TBD
4.2	**% of influenza vaccine wasted that is stored/administered by the public health unit**	Sep 1, 2014 - Aug 31, 2015	9.5%	0.5%	YES	Sep 1, 2015 - Aug 31, 2016	9	300	3.0%	0.5%	TBD
4.3	**% of refrigerators storing publicly funded vaccines that have received a completed routine annual cold chain inspection**	Jan 1, 2015 - Dec 31, 2015	100.0%	100.0%	NO	Jan 1, 2016 - Dec 31, 2016	398	398	100.0%	100.0%	TBD
4.4	**% of school-aged children who have completed immunizations for hepatitis B**	As of Jun 30, 2015	88.7%	Monitoring	NO	As of Jun 30, 2016	5,979	7,875	75.9%	Monitoring	NO

2016 YEAR-END INDICATOR SUMMARY TABLE: HEALTH PROTECTION INDICATORS

Board of Health for the Durham Region Health Department

20/Mar/17

#	Indicator	2015				2016					
		Reporting Period	Performance	Target (%)/ Monitoring/ Baseline	Performance/ Compliance Report	Reporting Period	Numerator	Denominator	Performance	Target (%)/ Monitoring/ Baseline	Performance/ Compliance Report Required
4.5	**% of school-aged children who have completed immunizations for HPV**	As of Jun 30, 2015	84.5%	Monitoring	NO	As of Jun 30, 2016	6,599	7,714	85.5%	Monitoring	NO
4.6	**% of school-aged children who have completed immunizations for meningococcus**	As of Jun 30, 2015	95.7%	Monitoring	NO	As of Jun 30, 2016	7,072	7,875	89.8%	Monitoring	NO
4.7	**% of MMR vaccine wastage**	N/A	N/A	N/A	N/A	Jan 1, 2016 - Dec 31, 2016	1,245	9,680	12.9%	Baseline	TBD
4.8	**% of 7 or 8 year old students in compliance with the ISPA**	N/A	N/A	N/A	N/A	As of Jun 30, 2016	6,125	7,676	79.8%	Baseline	NO
4.9	**% of 16 or 17 year old students in compliance with the ISPA**	N/A	N/A	N/A	N/A	As of Jun 30, 2016	5,679	8,177	69.5%	Baseline	NO

LEGEND:

N/A Not Applicable
-- Data not yet collected
TBD To be determined
UTD Unable to determine

The Corporation of the
Township of Uxbridge
In The Regional Municipality of Durham

Town Hall
51 Toronto Street South
P.O. Box 190
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Web www.town.uxbridge.on.ca

SENT VIA REGIONAL COURIER

REGION OF DURHAM
RECEIVED
MAR 17 2017
OFFICE OF THE REGIONAL CLERK

March 10, 2017

Region of Durham
605 Rossland Rd. E
Whitby, ON L1N 6A3

RE: DURHAM COMMUNITY CLIMATE ADAPTION PLAN
TOWNSHIP FILE: A-00 G

Please be advised that during the regular meeting of the General Purpose and Administration Committee of March 6, 2017 the following motion was carried;

> THAT Correspondence Item No. 38 be received for information;
>
> AND THAT the Sustainability, Watershed and Conservation Committee adopt the Durham Community Climate Adaptation Plan in principle

I trust you will find the above to be satisfactory.

Yours truly,

Michael de Rond
Deputy Clerk

/ljr

C.S. - LEGISLATIVE SERVICES

Original To: C1P
Copy To: B. Bridgeman & Clapp Dr. Kyle S. Siopis
C.C. S.C.C. File
Take Appr. Action

TOWN OF INGERSOLL
Town Centre

March 20, 2017

Honourable Kathleen Wynne, Premier of Ontario
Legislative Building – Room 281
Queen's Park
Toronto ON., M7A 1A1

RE: Development of Policy for Automated External Defibrillators in all Schools

Dear Premier Wynne:

The Council for the Municipality of the Town of Ingersoll passed the following resolution at their regular meeting of Council on March 6, 2017:

Moved by Councillor Franklin; seconded by Councillor Petrie

C17-03-067 WHEREAS Automated External Defibrillators are used to treat sudden cardiac arrest and have been proven to be life-saving during the waiting time period for emergency services;

AND WHEREAS for every minute a person in cardiac arrest goes without being successfully treated by defibrillation, the chance of survival decreases by 7 percent in the first minute, and decreases by 10 percent per minute as time advances past 3 minutes;

AND WHEREAS Andrew Stoddart, a 15 year old boy, passed away while playing soccer in Kintore, Ontario, an AED on site may have increased his odds of survival. Andrew's Legacy foundation has currently purchased 22 AEDs for across Oxford County, including all three elementary schools in Zorra Township;

AND WHEREAS Thames Valley District School Board has yet to put together a policy for having AED's in place in all, or any, of their public elementary and secondary schools;

THEREFORE BE IT RESOLVED THAT the Town of Ingersoll requests that the Premier, and Minister of Education, develop a policy that makes it mandatory for all schools and school boards in Ontario, including the Thames Valley District School

Board, that allows individual elementary and secondary schools to have an AED installed in their schools;

AND THAT the Town of Ingersoll request that the Thames Valley District School Board and all other schools in Ontario develop a policy to install AEDs in all schools as soon as possible for the safety of our children;

AND THAT this resolution be sent to the Premier, Minister of Education, AMO, Thames Valley District School Board; and all Ontario Municipalities for consideration and support.

CARRIED

The Council for the Town of Ingersoll urges the development and implementation of an AED policy for all schools to help ensure the safety of our children. Should you have any questions or comments regarding the Town's request please contact our office.

Sincerely,

Ann Wright
Deputy Clerk

cc Honourable Mitzie Hunter, Minister of Education
Thames Valley District School Board
Association of Municipalities of Ontario
All Ontario Municipalities

middlesex centre
in the centre of it all

March 15, 2017

Honourable Kathleen Wynne, Premier of Ontario
Legislative Building — Room 281
Queen' s Park
Toronto, Ontario
M7A 1A1

Dear Premier Wynne:

Re: Support for Policy to Install AEDs in all Schools

At its last regular meeting held on March 8, 2017, the Council the Municipality of Middlesex Centre enacted the following resolution:

WHEREAS Automated External Defibrillators are used to treat sudden cardiac arrest and have been proven to be life-saving during the waiting time period for emergency services;

AND WHEREAS for every minute a person in cardiac arrest goes without being successfully treated by defibrillation, the chance of survival decreases by 7 percent in the first, and decreases by 10 percent per minute as time advances past 3 minutes;

AND WHEREAS Andrew Stoddart, a 15 year old boy, passed away while playing soccer in Kintore, Ontario, an AED on site may have increased his odds of survival. Andrew's Legacy foundation has currently purchased 22 AEDs for across Oxford County, including all three elementary schools in Zorra Township;

AND WHEREAS Thames Valley District School Board has yet to put together a policy for having AED's in place in all, or any, of their public elementary and secondary schools;

THEREFORE BE IT RESOLVED THAT the Municipality of Middlesex Centre requests that the Premier, and Minister of Education, develop a policy that enables all school boards in Ontario, including the Thames Valley District School Board, that allows individual elementary and secondary schools to have an AED installed in their schools; and

FURTHER THAT the Municipality of Middlesex Centre request that the Thames Valley District School Board develop a policy to install AEDs in all schools in the Thames Valley District School Board as soon as possible for the safety of our children; and

FURTHER THAT this resolution be sent to the Premier, Minister of Education, AMO, Thames Valley District School Board; and all Ontario Municipalities for consideration and support.

Yours truly,

Stephanie Troyer-Boyd, AMCT
Clerk

c. Mitzie Hunter, Minister of Education
Association of Municipalities of Ontario
Laura Elliott, Director, Thames Valley District School Board
All Ontario Municipalities

Marie Alphonso

MAR 20 '17 AM11:57

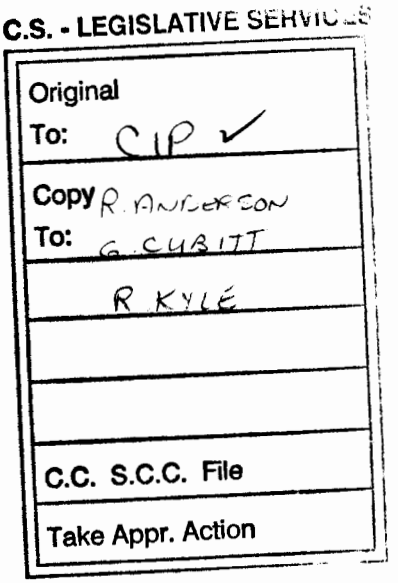
From: Will Jaques <wjaques@ezt.ca>
Sent: March-20-17 11:49 AM
To: kwynne.mpp@liberal.ola.org
Subject: Resolution re: Automated External Defibrillators in Schools
Attachments: School AED Resolution.pdf

Please find attached a copy of the resolution passed by the Council of the Township of East Zorra-Tavistock regarding the development of a policy that would enable all schools and school boards in Ontario to have Automated External Defibrillators installed.

Will Jaques, MPA
Corporate Services Manager/ Clerk
Township of East Zorra-Tavistock

Phone 519.462.2697 x225
Fax 519.462.2961

Email wjaques@ezt.ca
Website www.ezt.ca



Township of East Zorra-Tavistock

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March 20, 2017

Honourable Kathleen Wynne, Premier of Ontario
Legislative Building – Room 281
Queen's Park
Toronto, ON M7A 1A1

Dear Premier Wynne:

Re: Support for Policy to Install AEDs in all Schools

Please be advised that at their March 15, 2017, regular meeting, East Zorra-Tavistock Council considered and passed the following resolution:

Moved by: Maureen RALPH
Seconded by: Shirley MCCALL HANLON

WHEREAS Automated External Defibrillators are used to treat sudden cardiac arrest and have been proven to be life-saving during the waiting time period for emergency services;

AND WHEREAS for every minute a person in cardiac arrest goes without being successfully treated by defibrillation, the chance of survival decreases by 7 percent in the first minute, and decreases by 10 percent per minute as time advances past 3 minutes;

AND WHEREAS Andrew Stoddart, a 15 year old boy, passed away while playing soccer in Kintore, Ontario, an AED on site may have increased his odds of survival. Andrew's Legacy Foundation has currently purchased 22 AEDs for across Oxford County, including all three elementary schools in Zorra Township;

AND WHEREAS the Thames Valley District School Board has yet to put together a policy for having AEDs in place in all, or any, of their public elementary and secondary schools;

THEREFORE BE IT RESOLVED THAT the Muncipality of East Zorra - Tavistock requests that the Premier, and Minister of Education, develop a policy that enables all schools and school boards in Ontario, including the Thames Valley District School Board, that allows individual elementary and secondary schools to have an AED installed in their schools;

AND THAT the Municipality of East Zorra-Tavistock request that the Thames Valley District School Board and all other schools in Ontario develop a policy to install AEDs in all schools as soon as possible for the safety of our children;

AND THAT this resolution be sent to the Premier, Minister of Education, AMO, Thames Valley District School Board, MPP Ernie Hardeman; and all Ontario Municipalities for consideration and support.

CARRIED.

Yours truly,

Will Jaques
Corporate Services Manager/ Clerk

c: Mitzie Hunter, Minister of Education
Ernie Hardeman, MPP Oxford
Laura Elliott, Director, Thames Valley District School Board
Association of Municipalities of Ontario
All Ontario Muncipalities

NEMI

NORTHEASTERN MANITOULIN & THE ISLANDS

Box 608, Little Current, Ontario, POP 1KO
705-368-3500

March 17, 2017

Premier Wynne
Suite 101 - 795 Eglinton Avenue East
Toronto, Ontario
M4G 4E4

Dear Ms. Wynne:

Please find below a copy of a recent resolution passed by our Council:

Resolution No. 55-03-2017
Moved by: W. Koehler
Seconded by: P. Skippen
Whereas the Premier has announced that Ontario Hydro will be waiving delivery fees for customers who reside on First Nation reserves and settlements in Ontario;

And whereas the many families in the Town of Northeastern Manitoulin and the Islands are having trouble meeting their financial commitments because of the exorbitant delivery fees charged by Ontario Hydro;

Now therefore be it resolved that the Council for the Town of Northeastern Manitoulin and the Islands requests that the Province of Ontario treat all of Ontario Hydro's customers equally and eliminate the delivery fees for residents of the Town of Northeastern Manitoulin and the Islands.

Be it further resolved that, in the interest of transparency, Ontario Hydro explain to the municipalities which cost costing measures or alternative revenue sources will be put in place to replace the revenue losses it experiences from the elimination of the delivery charge to its customers.

And further that a copy of this resolution be sent to Premier Wynne, Minister Thibeault, and the other municipalities in the Province of Ontario.

Carried

Yours truly,

Pam Cress
Clerk

COPY TO: LEGIS SERVICES

Ontario
LEGISLATIVE ASSEMBLY

Sylvia Jones, MPP
Dufferin-Caledon

Room 443, Legislative Building
Toronto, Ontario M7A1A8

Tel: 416-325-1898
Fax: 416-325-1936
E-Mail: sylvia.jonesla@pc.ola.org

March 9th, 2017

REGION OF DURHAM
RECEIVED
MAR 2 1 2017
REGIONAL CHAIR & CEO

Chair Roger Anderson and Council
Regional Municipality of Durham
605 Rossland Road East PO Box 623
Whitby, ON
L1N 6A3

Dear Chair Anderson and Council,

I am writing to you as the new Progressive Conservative Critic for Infrastructure. In my role as the critic for infrastructure, I will be looking to hold the provincial government to account on its announcements and plans for infrastructure projects across the province. Municipalities, like yours, are an important partner in helping define Ontario's infrastructure needs.

If you have concerns about the provincial government's approach to infrastructure, be it delays or red tape, I want to hear from you. Ensuring that the government is held to account is essential as it ensures that the government invests transparently and in the areas that Ontarians need. If you would like to meet with me to discuss these issues in person, please contact my office at sylvia.jonesqp@pc.ola.org or 416-325-1898.

Sincerely,

Sylvia Jones, MPP
Dufferin-Caledon
Deputy Leader of the PC Caucus
Progressive Conservative Critic for Infrastructure

C.S. - LEGISLATIVE SERVICES

Original To: C/P
Copy To:
C.C. S.C.C. File
Take Appr. Action

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2097.

The Regional Municipality of Durham

MINUTES

DURHAM AGRICULTURAL ADVISORY COMMITTEE

March 7, 2017

A regular meeting of the Durham Agricultural Advisory Committee was held on Tuesday, March 7, 2017 in Boardroom 1-B, Regional Municipality of Durham Headquarters, 605 Rossland Road East, Whitby at 7:30 PM

Present: F. Puterbough, Member at Large, Vice-Chair
T. Watpool, Brock, Vice-Chair
I. Bacon, Member at Large
D. Bath, Member at Large
E. Bowman, Clarington attended the meeting at 7:40 PM
J. Henderson, Oshawa
B. Howsam, Member at Large
K. Kemp, Scugog
K. Kennedy, Member at Large
G. O'Connor, Regional Councillor
D. Risebrough, Member at Large
G. Taylor, Pickering
B. Winter, Ajax

Absent: Z. Cohoon, Federation of Agriculture, Chair
H. Schillings, Whitby

Staff Present: K. Allore, Project Planner, Department of Planning and Economic Development
L. McKenzie, Program Coordinator, Department of Planning and Economic Development
N. Prasad, Committee Clerk, Corporate Services – Legislative Services

In the absence of Z. Cohoon, Chair, F. Puterbough, Vice-Chair, assumed the Chair.

1. Adoption of Minutes

Moved by B. Winter, Seconded by D. Risebrough,
That the minutes of the Durham Agricultural Advisory Committee meeting held on February 9, 2017 be adopted.
CARRIED

2. Declarations of Interest

There were no declarations of interest.

3. Presentation

A) Ron Trewin, Project Manager, Transportation Design, Regional Works Department, re: Update on Regional Arterial Roads

R. Trewin, Project Manager, Transportation Design, Works Department, provided a PowerPoint presentation with regards to Regional Arterial Roads.

Highlights of the presentation included:

- Overview
- Durham – Transportation Infrastructure
- Condition of the Road Network
- Capital Road Program Growth
- 2017 Capital Road Program – Distribution by Project/Program, Type
- Priority Corridors
    - Brock Road
    - Bayly Street
    - Harmony Road
- 2017-2020 – Structures
- Proposed 2017-2020 Road Rehabilitation Projects
- 2017 Road Rehabilitation Projects
- 2017 Rural Road Rehabilitation Projects
- Design Considerations
- 2017 Intersection Project with future Rural Road Reconstruction
- Design Considerations

R. Trewin stated that Durham has a network of 60 arterial roads over 827 km in length. He stated that the regional road system provides connection to local road systems and highways. He advised that the Region is responsible for the maintenance and upgrading of the regional road system to provide a safe and efficient road transportation network.

R. Trewin advised that due to DAAC's feedback provided in 2016, recent changes were made to increase basic entranceway design standards and encourage consultation with farmers and landowners to determine the width needed for operation. A handout was provided with the new dimensions.

R. Trewin responded to questions with regards to: height/clearance requirements when rebuilding structures; the decision making process with regards to the installation of roundabouts instead of lights; road closures during periods of road construction; and construction of specific roads.

4. Discussion Items

A) 2017 DAAC Farm Tour

Discussion ensued with respect to the possible location of the 2017 Farm Tour. B. Winter advised that he contacted a representative from Ajax Downs who confirmed that they are agreeable to hosting the Farm Tour.

Discussion ensued with regards to: the possibility of creating an event for that day; whether there would be horses to view; and having different stations regarding nutrition, trailers, and maintenance of race tracks.

B) Rural and Agricultural Economic Development Update

L. MacKenzie, Program Coordinator, Economic Development, provided an update on the following matters:

- The Region of Durham Economic Development Strategy and Action Plan is being finalized by staff. Agriculture and food is a key area of focus for the 2017-2021 Plan.

- The 2013-2018 Agriculture Strategy provides guiding principles for identifying key actions to support the growth and viability of agriculture and the agri-food industry in Durham. A stakeholder meeting will be held in early April to review the current strategy and gather input for the next five year plan (2019-2024) to help focus efforts on current issues in the agriculture and agri-food sector.

- Lorne Coe, MPP (Whitby-Oshawa) is hosting an Agricultural Roundtable on March 15, 2017 at the Brooklin Community Centre. N. Rutherford and Z. Cohoon are scheduled to attend as guest speakers.

- Ontario's Rural Economic Development Program (RED) provides cost-share funding to rural communities, indigenous communities and organizations, and not-for-profit organizations and is now open. The Region will be submitting for the March 31st deadline as a sole applicant for the Local Food Business Retention and Expansion (BR&E) Project. The Region is also a partner on three municipal applications being submitted by the Township of Brock, Township of Uxbridge and The Brock Youth Centre. The Project will focus on supporting the local food economy and businesses.

- The Brock Economic Development Advisory Committee (BEDAC) is undertaking a tourism focused BR&E Initiative to determine how to capitalize on their best tourism assets; to continue to support existing tourism related businesses; to grow the tourism industry by attracting new businesses and visitors; and to create a sustainable tourism sector.

- An Exploring Value-Added Opportunities Workshop is scheduled for March 31, 2017 in Sunderland. The cost to attend is $20 and registration is available through the Township of Brock website.

- The 4th annual Clarington Agricultural Summit is scheduled for March 24, 2017 from 9 AM to 1 PM at the Newcastle Village Community Hall. The theme is "The Future of Farming" and registration is available through the Clarington Board of Trade website.

5. Information Items

A) Information Report #2017-INFO-23 re: Dissolution of the Greater Toronto Area Agricultural Action Committee

Report #2017-INFO-23 of the Commissioner of Planning and Economic Development regarding Dissolution of the Greater Toronto Area Agricultural Action Committee was provided as Attachment #2 to the Agenda.

B) Recommendation Report - #2017-COW-44 re: DAAC Membership Appointment

Report #2017-COW-44 of the Commissioner of Planning and Economic Development regarding Durham Agricultural Advisory Committee Membership Appointment was provided as Attachment #3 to the Agenda.

C) Recommendation Report #2017-COW-49 re: DAAC Annual Report and 2017 Workplan

Report #2017-COW-49 of the Commissioner of Planning and Economic Development regarding Durham Agricultural Advisory Committee 2016 Annual Report and 2017 Workplan was provided as Attachment #4 to the Agenda.

D) Appointment of Representation to the Royal Agricultural Fair Association Board of Governors

A copy of correspondence from C. Bandel, Acting Regional Clerk, regarding the appointment of Councillor Ted Smith as Regional Council's representative to the Royal Agricultural Winter Fair Association Board of Governors was provided as Attachment #5 to the Agenda.

Moved by Councillor O'Connor, Seconded by D. Risebrough,
That Information Items A) to D) be received for information.
CARRIED

6. Other Business

A) Durham Community Energy Plan

D. Risebrough advised that he attended the 2nd Durham Community Energy Plan stakeholder meeting on February 28, 2017.

B) Altona Lea Farm – 9th Generation Canadian Excellent Cow

The committee congratulated F. Puterbough and Altona Lea Farms for breeding the first ever 9th Generation Canadian Excellent Cow in Canada.

C) Sustainable Agriculture for Pickering Airport Lands

Discussion ensued with regards to the farming of the land that was expropriated for the Pickering airport.

7. Date of Next Meeting

The next regular meeting of the Durham Agricultural Advisory Committee will be held on Tuesday, April 4, 2017 starting at 7:30 PM in Boardroom 1-B, Level 1, 605 Rossland Road East, Whitby.

8. Adjournment

Moved by B. Winter, Seconded by E. Bowman,
That the meeting be adjourned.
CARRIED

The meeting adjourned at 8:52 PM

F. Puterbough, Vice-Chair, Durham Agricultural Advisory Committee

N. Prasad, Committee Clerk

Action Items
Committee of the Whole and Regional Council

Meeting Date	Request	Assigned Department(s)	Anticipated Response Date
September 7, 2016 Committee of the Whole	Staff was requested to provide information on the possibility of an educational campaign designed to encourage people to sign up for subsidized housing at the next Committee of the Whole meeting. (Region of Durham's Program Delivery and Fiscal Plan for the 2016 Social Infrastructure Fund Program) (2016-COW-19)	Social Services / Economic Development	October 5, 2016
September 7, 2016 Committee of the Whole	Section 7 of Attachment #1 to Report #2016-COW-31, Draft Procedural By-law, as it relates to Appointment of Committees was referred back to staff to review the appointment process.	Legislative Services	First Quarter 2017
October 5, 2016 Committee of the Whole	That Correspondence (CC 65) from the Municipality of Clarington regarding the Durham York Energy Centre Stack Test Results be referred to staff for a report to Committee of the Whole	Works	
December 7, 2016 Committee of the Whole	Staff advised that an update on a policy regarding Public Art would be available by the Spring 2017.	Works	Spring 2017
January 11, 2017 Committee of the Whole	Discussion also ensued with respect to whether implementing a clear bag program will help to increase recycling and green bin program compliance at curbside. Staff was directed to bring an updated report on a clear bag program to an upcoming meeting of the Committee of the Whole.	Works	

Meeting Date	Request	Assigned Department(s)	Anticipated Response Date
January 11, 2017 Committee of the Whole	Inquiry regarding when the road rationalization plan would be considered by Council. Staff advised a report would be brought forward in June.	Works	June 2017
March 1, 2017 Committee of the Whole	Staff was directed to invite the staff of Durham Region and Covanta to present on the Durham York Energy Facility at a future meeting of the Council of the Municipality of Clarington.	Works	
March 1, 2017 Committee of the Whole	Staff was requested to advise Council on the number of Access Pass riders that use Specialized transit services.	Finance/DRT	March 8, 2017
March 1, 2017 Committee of the Whole	That the presentation given by the Commissioner of Finance at the Transit Executive Committee meeting on February 23, 2017 on PRESTO be given at the March 8, 2017 Council meeting.	Finance/DRT	March 8, 2017
March 1, 2017 Committee of the Whole	That staff invite a representative from Metrolinx to attend a Regional Council meeting as a delegation regarding the PRESTO Agreement.	DRT/CAO	
March 1, 2017 Committee of the Whole	A request for a report/policy regarding sharing documents with Council members.	Corporate Services - Administration	Prior to July 2017