

LONG TERM

# Water

Conservation Strategy 

Annual Report  
March 31, 2018

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## 1.0 Purpose and Need for the Annual Report

On March 31, 2010, the Ministry of Environment and Climate Change (MOECC) approved the Southeast Collector Trunk Sewer Individual Environmental Assessment (SEC IEA) subject to thirteen conditions (with seventy-four sub-conditions), including Condition 8 which refers to the Long Term Water Conservation Strategy and Inflow and Infiltration Reduction Monitoring Strategy.

This report is the seventh annual report prepared to address Conditions 8.8 and 8.9 of the SEC IEA Minister's Conditions of Approval, and Schedule B of the Permits to Take Water (PTTWs) regulating the Region's intra-basin transfer. It details the 2017 progress on implementation of the 2011 Long Term Water Conservation Strategy (LTWCS) and 2016 LTWCS update submitted to the Ministry on March 31, 2011 and March 31, 2016 in accordance with Condition 8 respectively.

Requirements under Conditions 8.8 and 8.9 are as follows:

- York Region to submit to the Regional Director an annual report detailing its progress on implementing the Strategy including inflow and infiltration reduction.
- Each annual report prepared shall include at a minimum:
  - a) Results of water conservation and efficiency measures
  - b) Results of flow monitoring and visual inspections to determine the sources and amount of inflow and infiltration into the Southeast Collector Trunk Sewer within the Regional Municipality of York
  - c) Progress in the reduction of inflow and infiltration into the Southeast Collector Trunk Sewer
  - d) Details of any remedial work to the sewage system undertaken and the results of the remediation
  - e) Results achieved within the Regional Municipality of York with respect to inflow and infiltration reduction measures

Results made on the implementation of the inflow and infiltration reductions are compiled in the Inflow and Infiltration Reduction Strategy Annual Report dated March 31, 2018. Progress made towards the implementation of water conservation initiatives, and annual intra-basin transfer volumes are presented in this report (as shown in **Appendix A: Intra-Basin Transfer Summary 2017**).

York Region will continue the preparation and submission of the annual reports to the Ministry until such date as the Regional Director indicates that updates are no longer required.

## 1.1 Comments and Feedback Received

On May 25<sup>th</sup>, 2017, the Central Region Director of the MOECC provided comments on and indicated satisfaction with the 2017 LTWCS Annual Report dated March 31<sup>st</sup>, 2017. These comments stated that York Region continues to show leadership in water conservation and progress in achieving its targets. The letter noted that the report does an excellent job describing the factors affecting water demand: water conditions, population growth, water rates, and changes to Ontario's Building Code.

The MOECC recognized that the Region's "big data initiative" started in 2015 with the development of the Water Consumption Database and continues to be enhanced thereby enabling the Region to more accurately calculate and map water consumption, compare winter and summer water consumption, target its programs to high water users, and track greenhouse gas savings from applicable water savings programs and projects.



## 2.0 Background

Centrally located in the Greater Toronto Area (GTA), York Region is one of the fastest growing regions in Canada. The Region is the only municipality in the GTA without direct access to Lake Ontario for its drinking water supply and, therefore, secures its water from water supply agreements with the City of Toronto and Peel Region (90 per cent), as well as from Lake Simcoe and groundwater sources (10 per cent). The population of the Region is currently 1.2 million and is projected to increase to about 1.8 million by 2041. Without conservation, demand for drinking water and wastewater treatment will increase significantly as the population grows. In recent years, the Region has shifted focus from individual water usage to developing marketplace-based programs that specifically target high water users. A market-based approach utilizes the marketplace as delivery agents for water conservation with the ultimate goal of generating transformative, sustained change.

### 2.1 Water Conservation and Sustainable Growth

As per Provincial direction through Places to Grow legislation, York Region's current Official Plan directs growth until 2031. The focus of the Region's Official Plan (YROP-2010) is to foster sustainable growth and create healthy, livable communities and a resilient natural environment.

Water supply and wastewater collection are significant Regional growth considerations. Integrating water infrastructure planning with water conservation programming is critical to meeting increases in water demands.

It is anticipated that a large portion of growth over the next decade or so will occur in Greenfield areas, with an increasing amount of growth in the Urban Growth Centres and Regional Corridors in the form of high-rise development. While growth areas provide an ideal opportunity to design water-efficient processes and storm management into new buildings, the sheer number of existing customers in York Region means that a significant effort must also be made to reduce the per capita demands of these customers.

The increasing water demands over time due to significant growth puts more pressure on the Region to deliver its water conservation programming. Reducing the amount of water loss and water wasted for non-potable uses, and adopting water reuse strategies should enable the Region to meet growth-related increases in water demand with minimal increase in water

supply. This helps to ensure the sustainability of the Region’s water supply system and long-term water savings across all sectors.

## 2.2 One Water Action Plan

In 2017, York Region released its *One Water* action plan, which foresees water conservation and reuse as fundamental elements of the Region’s Water system. York Region needs a *One Water* approach in order to meet the water demands of growth while achieving both financial and environmental sustainability.

York Region has been working to achieve the goals of *One Water* for several years through existing conservation programs and other efforts. The Region is now formally building a *One Water* approach into planning activities through the development and implementation of the *One Water* action plan. The action plan brings together existing programs and identifies new opportunities that promote integrated water resource planning and innovation.

There are three high-level goals within the *One Water* action plan, falling under the broad headings of Integrate, Innovate and Infra-stretch as illustrated in Figure 1. The action plan sets out strategies to achieve each goal, and under each strategy the specific actions intended to advance it.



Figure 1: “One Water” Action Plan

Implementation is currently underway. The successful implementation of the plan will depend on the continued support and expertise from across the Region and external partners. An important aspect of the *One Water* action plan is continuing to build collaborative partnerships in order to manage challenges and explore new opportunities to improve the resiliency of our critical infrastructure systems. This plan ultimately provides an opportunity to look at our system through a different lens and take a more holistic approach towards sustainability while continuing to provide reliable services to our residents and businesses. Furthermore, it will put York Region at the forefront of understanding the full value of water and opportunities to help people, businesses and communities thrive.

## 2.3 Water Saving Targets and Timelines

York Region is on track to achieve its aspirational target of 150 LCD by 2051. Per capita residential water demands have declined over the last decade due to the impact of Regional programs, an improvement in the efficiency of key water-using fixtures and appliances (e.g. toilets, clothes washers, and showerheads), advancements in the Ontario Building Code, and a growing awareness of the importance of using our natural resources wisely. Further savings are required if the Region is to reach its goal of 150 LCD.

Table 1 summarizes target residential consumption rates that can be achieved over time if three water saving scenarios are implemented.

In 2015, York Region embarked on a big data initiative as improvements were made to the methodology for calculating LCD in the Water Consumption Database (WCD). These improvements ensured accuracy and consistency in the analysis of water billing data going

forward. As such, the baseline year used for the water saving scenarios was updated from 2014 to 2015 to reflect the best available information.

**Table 1: Residential Water Saving Targets and Timelines**

Water Saving Scenarios	2015	2021	2031	2041	2051
	Residential Consumption Rate (LCD)				
<b>Scenario 1</b> Regional Incentive Programs	200	192	185	179	173
<b>Scenario 2</b> Regional Incentive Programs + Existing Provincial Programs and Legislation		190	183	176	170
<b>Scenario 3</b> Regional Incentive Programs + Existing Provincial Programs and Legislation + Water Reuse and Provincial Guidance and Legislative Changes			180	165	150



## 3.0 Water Demand Analysis

In 2017, York Region water demand was estimated to be 187 litres per capita per day (LCD)—down from the baseline water consumption rate of 199 LCD in 2016. Per capita demands are calculated using only single-family residential population. Since the initiation of water conservation programs, it is estimated that these programs have resulted in a savings of 26.6 million litres per day (equivalent to 10 ½ Olympic-sized swimming pools); this equates to water consumed daily by more than 140,000 people. Through the continued implementation of the 2016 Strategy Update over the next few years, the Region remains on track to achieve the aspirational 2051 target consumption rate of 150 LCD (via scenario 3 in Table 1).

### 3.1 Water Demand by Sector

Through the enhanced development of the water consumption database the Region has developed better analytics to estimate the water demand by sector, including residential, industrial, commercial and institutional (ICI), and non-revenue water. Tracking water demand by sector provides a greater insight into how water demand is distributed among homes, businesses, and non-revenue uses—thus enabling the Region to better target its conservation programming.

After analysis of local municipal customer water consumption data, International Water Association audits, a new water loss tracking tool developed in collaboration with the local municipalities, and York Region supply data indicates that 2017 Regional water demand is approximately 308 MLD. This can be broken down by sector as 65 per cent for residential; 23 per cent for ICI; less than 1 per cent for other types of properties; and 12 per cent for non-revenue water, as shown in Table 2. Within 65 per cent residential sector, it contains 75 per cent single-family residence, 20 per cent multi-unit residence, and 5 per cent other type of residence (type of residence is defined by MPAC codes, see Appendix D: MPAC Property Codes Description).

**Table 2: 2017 Water Demand by Sector**

Sector	Total 2017 Demand (MLD)
Residential	199
- Single-Family Residential	148.9
- Multi-Residential	39.2
- Other Residential	11.0
Industrial, Commercial and Institutional	70.3
Other	0.6
Non-Revenue Water	37.7
<b>Total Demand</b>	<b>307.6</b>

### 3.2 Factors Affecting Water Demand

In addition to the Region’s water conservation programs and initiatives (which are detailed in section 4.0), numerous factors such as weather, population growth, water rates and changes to the Building Code have an influence on water demands each year.

#### 3.2.1 Weather Conditions

Weather plays a significant factor in overall water demands from year to year. As a rule of thumb for outdoor water consumption, the hotter and dryer the weather, the greater amount of water is consumed (such as filling pools, turning on sprinklers, etc.). In 2017 the weather was milder and wetter than in 2016. In 2017, there were a total of 70 hot days (average daytime temperature above 25°C) and 132 rainy days compared to 95 hot days and just 101 rainy days in 2016. The total rainfall was 927.3 mm in 2017 (as shown in Table 3), making it the wettest year on record (since 1993 as recorded). This was one of the driving forces towards lowering the LCD this year.

**Table 3: Weather Statistics for York Region, 2014-2017<sup>1</sup>**

Year	Average Summer Temperature (°C)	Total Annual Rainfall (mm)	Total Hot Day (above 25 °C)	Total Rainy Day
2014	18.3	817.1	60	121
2015	20.2	660.0	76	114
2016	21.5	550.9	95	101
2017	19.5	927.3	70	132

<sup>1</sup> Obtained from <https://newmarket.weatherstats.ca/charts/>

### 3.2.2 Population Growth

York Region is one of the fastest growing and innovative regions in North America. The Region's commitment to innovation and being a leader through water conservation strategies has resulted in overall water demand remaining constant despite population increases.

Water demand gradually declined between 2012 and 2017 despite increases in York Region's population, proving that water conservation works. This trend of decreasing water demand with a growing population is expected to persist into the future as the Region continues to strive to meet its 150 LCD residential target.

### 3.2.3 Water Rates

The Region charges each local municipality a uniform cost per cubic meter regardless of the volume of water purchased or time of year. The Region charges its municipal customers based on a uniform rate, the revenue generated by water sales varies from year to year based on local weather conditions, i.e., higher water sales during years with hot dry summers, and lower water sales during years with cool wet summers. Each local municipality, in turn, is responsible for developing their own rate structure to bill their own customers. Some municipalities are starting to implement stormwater rates to recover the operational and capital cost of stormwater infrastructure.

Table 4 summarizes the Region's historical water rates since 2011 and future blended rates through to 2021, as endorsed by Regional Council in October 2015. Annual water rate increases are determined based on full cost recovery analysis; a detailed analysis of water demands, population growth, maintaining existing assets, day-to-day operations, and building reserves for future asset rehabilitation and replacement.

**Table 4: Regional Water Rates, 2011–2021<sup>2</sup>**

Year	Water Rate (\$/M <sup>3</sup> )	Wastewater Rate (\$/M <sup>3</sup> )	Blended Rate (\$/M <sup>3</sup> )	Increase (%)
2011	0.6973	0.7900	1.49	-
2012	0.7512	0.8848	1.64	10
2013	0.8087	0.9910	1.80	10
2014	0.8697	1.1099	1.98	10
2015	0.9345	1.2431	2.18	10
2016	0.9582	1.4158	2.37	9
2017	1.0021	1.5855	2.59	9
Year	Water Rate (\$/M <sup>3</sup> )	Wastewater Rate (\$/M <sup>3</sup> )	Blended Rate (\$/M <sup>3</sup> )	Increase (%)
2018	-	-	2.82	9
2019	-	-	3.07	9
2020	-	-	3.35	9
2021	-	-	3.45	2.9

<sup>2</sup> Rates from 2011 to 2016 obtained from the 2016 LTWCS Strategy Update. Rates for 2017 through to 2021 were approved by the Council of The Regional Municipality of York on October 8, 2015.

As water rates in York Region increase, some residents may consider adopting water conservation practices. Numerous studies have shown price to be an important driver of demand for water in some service areas, with outdoor use generally more responsive than indoor use. As shown in Figure 2, water rates have been increasing the highest compared to other historical utilities. Responsiveness varies widely with location, however, because of the impact of such factors as local climate, attitudes, incomes and the relative price of water.

Since some of the costs associated with providing water services vary (e.g. energy required to pump and distribute water, chemical costs to treat water), reducing water demands will reduce operational costs and therefore, reduce the revenue needs of the Region. As such, reducing peak demands helps keep water rate increases to a minimum and ensures that water remains affordable to all customers. Reducing water demands on a per capita basis will also enable a greater number of customers to be serviced with the same volume of water. In addition, reducing water demand will allow the Region to defer spending on further infrastructure, and minimize any future water rate increases. In other words, saving water frees up existing supply to support growth and minimize the need for infrastructure expansion.

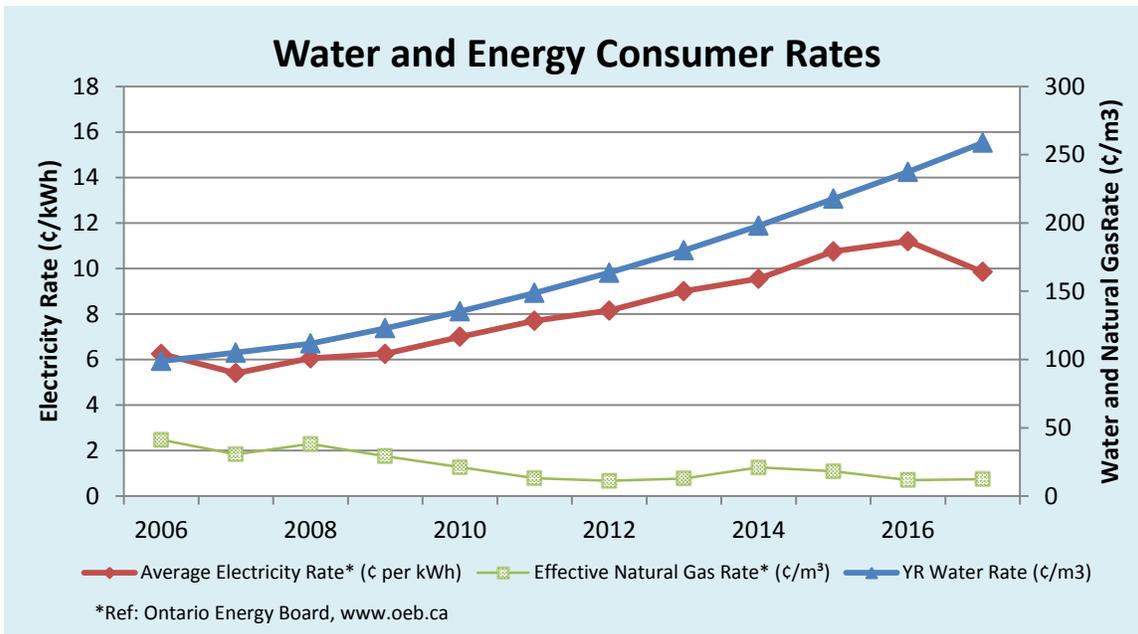


Figure 2: Water and Energy Rate



## 4.0 Water Conservation Initiatives & Achievements

As part of the *One Water* action plan, York Region is using a market-based approach to deliver cost-effective and adaptive system-wide water conservation programming that generates long-term, sustained water savings. An overview of York Region's 2017 program activities and achievements is provided in Table 5; key programs and initiatives are elaborated on in subsequent sections.

The measures and programs identified herein include both existing and new initiatives as shown in Figure 3. For ease of reference the measures and programs have been categorized as follows:

- Programs for ICI High Water Users
- Programs for Small Businesses
- Outdoor Peak Demand Reduction
- Education and Outreach
- Non-Revenue Water
- Residential New Development
- Water Reuse
- Collaboration and Advocacy
- Big Data Analytics



Figure 3: Water Conservation Initiatives

Table 5: Long Term Water Conservation Strategy 2017 Achievements

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
<b>Programs for ICI High Water Users</b>				
ICI Water Use and Wastewater Quality Consultations	Conduct facility consultations	ICI	Continue to offer program to ICI sector	Conducted 13 ICI facility consultations this year. Cumulative audits to date: 44.
ICI Capacity Buyback	Complete post-audit and provide incentive	ICI	Continue to offer program to ICI sector	Completed a post-audit in 1 facility; cumulative to date is 7 facilities. Created a case study to highlight the results and success of the post-audit.
<b>Programs for Small Businesses</b>				
Water Efficiency Equipment Replacement Incentives	Provide incentives for equipment replacement	Small and Medium-sized Enterprises	Promote and offer incentives	The prescriptive incentives were approved and effective on October 1st.
<b>Outdoor Peak Demand Reduction</b>				
Water Smart Irrigation Professionals (WSIP)	Provide training and certification to contractors	Contractor	Continue to offer program	The WSIP training program took place on April 2017 with 28 attendees. There are now 29 WSIP companies certified to date. Incentives for assessments and irrigation controllers were issued for 61 ICI facilities.
	Provide incentives for assessments completed by certified contractors	Contractor		
Fusion Landscape Professionals (FLP)	Provide training and certification to landscape professionals	Landscape Professionals	Continue to offer program	The FLP training session took place in November 2017 with 19 attendees. A second FLP training session was held in February 2018.
Fusion Gardening® Pilot	Monitor residential landscape change	Residential	Conduct annual evaluation of pilot	Obtained 2017 water consumption data and residential landscape photos.
	Evaluate water savings	All		

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
	Demonstration gardens	Residential and ICI	Install 2 to 3 demonstration gardens per year	One garden was completed in partnership with the City of Markham.
	Retail partnerships	Residential	Evaluate role of retail partners and explore new opportunities	Maintained three of four partnerships. The fourth retailer is no longer in business.
Education and Outreach				
"Water Is" Campaign	Education outreach	All	Continue education initiative	More than 2,000 total page views on York.ca/wateris.
				Over 640,000 people reached with "Water Is" messaging on social media (Facebook, Twitter, and YouTube).
				More than 2300 "Water Heroes" and "What you Pay For" video views on YouTube.
				Launched the "Good Question: Why are my water rates going up" video and had more than 280 views on YouTube.
				Hosted a Canada Water Week event for York Region staff to educate them on our water and wastewater programs and initiatives.
				In 2017, the "Water Is" communications campaign received an International Association of Business Communicators Award of Merit and the American Water Works Association's Public Communications Achievement Award

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
				<p>An article on the “Water Is” campaign was featured in <i>Influents Magazine</i>. The magazine has a circulation of 2,700 with a pass-along readership of over 8,100.</p> <p>Presented the “Water Is” campaign at the WEAO 2017 Conference in Ottawa to industry professionals.</p> <p>Printed and delivered 3,000 “How your water dollars are invested in Vaughan 2017” brochures which were given to the City of Vaughan for resident distribution.</p> <p>Collaborating with York Region Community and Health Services, new handwashing posters, new handwashing posters that included 10 different educational water and wastewater messages were created. More than 12,000 posters were printed for distribution. In 2017, 10,150 posters distributed to businesses in York Region in 2017 by York Region Public Health. Posters will continue to be distributed with inspectors in 2018.</p>
Children’s Water Festival	Student participation rate	Schools	Continue participation	4,674 students and 661 teacher/supervisors attended
Student Education Initiatives	Education content	Schools	Continue education initiative	11 school presentations, 1,550 students/teachers engaged
Water Efficiency Outreach to New Canadians	New Canadian participation rate	New Canadian	Continue initiative	Completed 2 Welcome Centre presentations

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
<b>Non-Revenue Water</b>				
IWA Water Audit/Balance	Identify leakage in system	Local Municipalities	Coordinate audits with local municipalities	Received all 9 municipal IWA audits for 2016. Initiated a peer review project of municipal IWA water audits.
Leak Detection Program	Minimize water leakage in system	Local Municipalities	Based on audit	Leak reduction evaluation for ILI values greater than 3. Launched a water loss tracking tool for the local municipalities and York Region.
<b>Residential New Development</b>				
Sustainable Development through LEED® (high-rise development)	Estimated number of units constructed to standard	Multi-Family Residential	Continue to offer program	1,604 units have been registered in accordance to LEED® Incentive Program's standards since 2014.
Servicing Incentive Program (SIP) (low-rise development)	Estimated number of units constructed to standard	Residential	Continue to offer program	313 homes were enrolled in the SIP program in 2017
<b>Water Reuse Strategy</b>				
Water Reuse	Development and research into water reuse applications	All	Initiate pilot	Phase 1 of Water Reuse Research Demonstration Project near completion. Two stakeholder sessions were held including participants from MOECC, Ontario Ministry of Agriculture, Food and Rural Affairs, Agriculture Canada and Conservation Authorities. Academic team retained along with a test plot location at an operating sod farm. Irrigation of test plot with reclaimed water anticipated to start in 2018.

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
	Water Reuse for the ICI Sector	ICI	Continue to offer program to ICI sector	Higher incentives offered for water reuse opportunities
<b>Collaboration and Advocacy</b>				
Advocacy	Coordinate the Water Conservation Advisory Committee	All	Coordinate committee meetings	Conducted 3 Water Conservation Advisory Committee meetings.
	Coordinate the Water and Wastewater Liaison Committee meeting	Local Municipalities	Coordinate committee meetings	Conducted 2 Water and Wastewater Liaison Committee meetings. Hosted presentations from LSRCA and City of Markham
Stakeholder Collaboration	Collaboration with Other Regions	Ontario Regions	Increase Collaboration and Delivery of Water Conservation Initiatives	Collaborated with Peel Region for water conservation workshop, WSIP and FLP training with Landscape Ontario. Coordinated incentives to reduce confusion within Ontario.
	Collaboration with Conservation Authorities	Toronto and Region Conservation Authority (TRCA), Lake Simcoe Region Conservation Authority (LSRCA)	Increase Collaboration and Delivery of Water Conservation Initiatives	Collaborated with TRCA in a water consultation program and stormwater monitoring for the Fusion Gardening Pilot Program. Collaborated with TRCA and LSRCA on water conservation messaging and education through involvement with the WCAC.
	Collaboration with Utility Providers	Alectra Utilities, Enbridge Gas	Increase Collaboration and Delivery of Water Conservation Initiatives	Initiated discussion with Alectra Utilities regarding marketing Regional water conservation programs. Collaborated with both utility companies regarding incentives.

Program Components	Tactics	Sector	2016 to 2021 Goals	Achievements
<b>Big Data Analytics</b>				
Water Consumption Database (WCD)	Collection of water billing data	Local Municipalities	Collection of 2017 water billing data for the 9 local municipalities	Collected all municipal billing data, which was uploaded into the WCD and used for water consumption per capita per day analysis.
	Determine consumption by sector	All	Generate water consumption reports for ICI and residential sectors	Calculated water demand by sector in 2017; refer to section 3.1
Tracking summer and winter water demand per capita	Comparing summer versus winter water demand	Residential	Analyze data	Analyzed 2017 water billing data and compared summer and winter consumption.
Identify high water users	Mapping high water users	All	Generate GIS heat maps for high water users	Completed detailed analysis; refer to section 4.9.
Energy-Water Nexus	Document and evaluate water/energy savings outcomes for specific programs and pilots	All	Document and evaluate 2017 water savings achieved	Completed program review. Tracking water and energy savings per applicable programs and projects.
Greenhouse Gas Reduction	Track greenhouse gas emissions savings outcomes from water and energy use reduction	All	Analyze data	Tracked equivalent greenhouse gas emissions reduction from water saved, approximately 82.5 tons CO <sub>2</sub> e/year savings in 2017
Program Evaluation	Improve tracking and reporting processes for programs and pilots	All	Evaluate current tracking frameworks and improve process to ensure correct data is captured and targets are being met	Completed program review for tracking and reporting purposes.

## 4.1 Programs for ICI High Water Users

ICI facilities are typically the largest individual consumers of water in York Region. As such, it is crucial for the Region to continue to provide water conservation programs and incentives targeted specifically at this sector. In order to promote the water saving and incentive programs, a brochure (Figure 4) was updated in Fall 2017. Around this time, the Region hosted its annual Water Conservation Workshop on September 26<sup>th</sup>, 2017 at the Earth Rangers Centre for Sustainable Technology to introduce and discuss these programs with local businesses with 32 sign-up attendees. More information on programs and incentives for businesses can be found at [york.ca/waterincentives](http://york.ca/waterincentives).

**Water Conservation Programs and Incentives for Businesses**  
Save water. Save money.

**Incentives for Outdoor Irrigation Systems**  
**Water Smart Irrigation Professional (WSIP) Program**  
The Water Smart Irrigation Professional (WSIP) Program provides specialized training to irrigation system efficiency, assessment and maintenance services. Certified WSIP contractors are industry leaders, and can help businesses maintain beautiful curb appeal, while lowering water consumption and costs.  
Following an irrigation assessment, business will receive:  

- Customized landscape watering schedule
- Summary report which includes calculations of the associated return on investment
- Average water savings of approximately 45 per cent

**Incentives for the Industrial, Commercial, and Institutional (ICI) Sector**  
**Water-Use and Wastewater Quality Consultation Program**  
York Region offers water use and wastewater quality consultations at no cost for high water-use businesses. Participating businesses will also receive access to incentives based on installed eligible retrofits through the Capacity Buyback Incentive Program.  
**Capacity Buyback Incentive Program**  
Financial incentives of up to \$40,000 are available if your facility implements one or more of the recommended capital retrofits to reduce water consumption, reuse water or install submeters as identified in the water use and wastewater quality consultation.  
To find out more about our water-saving programs and to download application forms, please visit [york.ca/waterincentives](http://york.ca/waterincentives)  
1-888-967-5436  
[waterfortomorrow@york.ca](mailto:waterfortomorrow@york.ca)

**Incentives for Small Businesses**  
**Equipment Replacement Incentives**  
York Region offers financial incentives for businesses that replace inefficient equipment with new water-efficient equipment. Your business can get an incentive of up to 50 per cent of the cost of the retrofits to a per unit maximum of:  

Walk In Fridge/Freezer.....	\$1,000	Dipper WGL.....	\$100
Ice Machine.....	\$1,000	Pre-Rinse Spray Valve.....	\$12
Toilet Flush Valve and Bowl Combination.....	\$100	Dental Vacuum Pump.....	\$1,000

**Incentives for Sustainable Residential Developments**  
**Servicing Incentive Program**  
New residential developments that are a maximum of three stories high can qualify for water and wastewater servicing capacity assignment credits of up to 50 per cent through the Servicing Incentive Program.  
**Sustainable Development Through LEED®**  
The Sustainable Development Through LEED® (Leadership in Energy and Environmental Design) incentive program provides up to 50 per cent in water and wastewater capacity assignment credits for new residential high-rise buildings that are four stories or higher.

Figure 4: ICI Water Use and Wastewater Quality Consultations

Our ICI Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive Programs offer water audits at no cost to ICI facilities and incentives if permanent water-saving retrofits or upgrades are implemented.

The ICI Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive programs are significantly more flexible than typical prescriptive incentive programs because payments are based on water savings per installed retrofit. As such, ICI customers are free to implement all or some of potential water conservation opportunities, including changes to equipment and processes, water reuse activities, indoor and outdoor water uses, etc., to achieve water savings.

The ICI Water Use and Wastewater Quality Consultation program has been limited to 10 audits per year for large manufacturers as it requires in-depth water audits with monitoring, engineering analyses and reports. Table 6 shows the breakdown of audits completed per municipality and their associated potential water savings.

**Table 6: ICI Water Audits**

Municipality	Number of Water Audits (2011–2017)	Estimated Water Savings (m <sup>3</sup> /year)
Aurora	2	31,212
East Gwillimbury	2	3,285
Georgina	0	N/A
King	2	14,996
Markham	6	81,798
Newmarket	3	43,864
Richmond Hill	4	226,115
Vaughan	25	376,090
Whitchurch-Stouffville	0	N/A
<b>Total</b>	<b>44</b>	<b>777,360</b>

The 2016 Strategy emphasized water reuse as a critical component in achieving the aspirational target of 150 LCD by 2051. To enhance York Region’s water conservation program, York Region incorporates water reuse into the ICI Water Use Consultation program and increased its Capacity Buyback incentives level (as detailed in Section 4.7.2).

#### 4.1.1 ICI Capacity Buyback Incentive

Previously, York Region had offered the capacity buyback incentive rate as \$0.30 per litre of water saved on a single average day for ICI high water users who implement one or more of the recommended permanent water-saving retrofits. In 2017, the ICI Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive programs were evaluated; the incentive rate has been changed and included new additional innovations, to make these programs stand up to best-in-class programs within Ontario and throughout North America. The new incentive structure is shown in Table 7.

**Table 7: List of updated incentives to York Region’s ICI programs**

Description		Benefits
1	Increase water saving retrofits incentive amount from \$0.30/L/day to \$0.75/L/day.	<ul style="list-style-type: none"> <li>Provides additional leverage for businesses to offset implementation costs, thereby leading to more implementation of measures</li> <li>Increases perceived value of water for businesses</li> <li>Makes the program best-in-class within Ontario</li> </ul>
2	Increase the incentive amount for water reuse from \$0.30/L/day to \$2/L/day.	<ul style="list-style-type: none"> <li>Addresses the complex, expensive nature of implementation</li> <li>Encourages implementation of reuse opportunities</li> </ul>
3	Provide a rebate of \$200 (up to a maximum of \$1,000) to have sub-meters installed permanently at facilities.	<ul style="list-style-type: none"> <li>Identifies and regulates excessive water use</li> <li>Quantifies water and monetary savings to justify implementation of water conservation opportunities</li> <li>Increases employee awareness of water use and conservation</li> </ul>

*The incentive limit is up to 50 per cent of the capital cost of each retrofit with a total of up to a maximum of \$50,000 per facility.*

Every year York Region expects at least one facility to implement recommended water saving opportunities and apply for capacity buyback incentive. A case study is likely to be created to show successful water conservation through Arla Foods Inc.

In 2017 a capacity buyback application was received from Arla Foods Inc., their implementation has resulted in a 32 per cent water reduction compared to their total consumption since 2014. By implementing a suite of water saving measures — from replacing spray nozzles with more efficient models to reusing process water — Arla Foods has been able to reduce its annual water consumption by more than 37,000 cubic metres, which equates to a savings of \$143,000. Arla Foods also received a water savings incentive of \$19,487 from York Region and has had additional savings of over \$142,000 annually from a reduction in natural gas, cleaning chemical and labour costs. A case study for Arla Foods was developed (see **Appendix C: Arla Foods Case Study**) to highlight the success of the project and promote the business as one which is committed to water efficiency.

## 4.2 Programs for Small Businesses

This year a new small business incentive program was created and named the *Water Efficiency Equipment Replacement Incentives Program* to cover more water-efficient equipment and make it simpler for small businesses to participate.

The new prescriptive incentives structure, as shown in **Table 8** offers a rebate per unit replaced. A rebate can be given to the applicant upon receipt of a valid proof of purchase and photos of the newly installed equipment without requiring an audit. Structuring the incentives this way makes participation in the program more straightforward and easier for small businesses who may have limited resources and time.

Furthermore, The Regional Municipality of Peel currently offers a very similar rebate structure under their Water Efficiency Program. By offering a similar rebate structure, collaboration is strengthened between York and Peel Regions which helps to provide a more cohesive conservation message.



**Table 8: Prescriptive Incentives**

Measure	Condition	Rebates (\$ per unit replaced)	Potential water saved per unit (m <sup>3</sup> /year)
Walk-In Fridge Freezer Condenser	Replacement of a water cooled walk-in fridge/freezer condenser with an air-cooled unit	\$1,000	900
Ice Machine	Replacement of a water-cooled Ice machine with an air-cooled unit	\$1,000	292
Dipper Well	Replacement of a dipper well faucet with one which is rated for a flow of 0.5 gpm or less	\$60	746
Pre-Rinse Spray valve	Replacement of a pre-rinse spray valve with a WaterSense® labelled pre-rinse spray valve	\$25	27
Toilet Flush Valve and Bowl Combination	Replacement of a toilet flush valve and bowl with a WaterSense® labelled toilet flush valve	\$100	206
Dental Vacuum Pump	Replacement if a liquid ring dental vacuum pump with one that does not use water to create suction	\$1,000	625

**Note: Each rebate is up to 50% of the cost to undertake the process change to a maximum one-time payout as stated in the rebates on each measure.**

### 4.3 Outdoor Peak Demand Reduction

In 2017 York Region continued to implement outdoor peak demand reduction strategies. Peak demands occur in the summer when it is hot and dry. During these peak periods, water treatment facility energy and pumping demands for production and distribution are at their highest, making this the most costly water to produce. A significant contributor to high peak day water demands is landscape irrigation. Recognizing the importance of the environmental, and health and wellness benefits that green infrastructure brings to each community, York Region collaborates with Peel Region and Landscape Ontario to promote and proactively encourage design, installation and maintenance of efficient landscape and irrigation practices that can positively lower summer time peak day water use.

#### 4.3.1 Water Smart Irrigation Professionals (WSIP)

In March 2017, Landscape Ontario hosted the annual 2-day training course in partnership with York Region and Peel Region; it was attended by 28 contractors. Training focused on water conservation principles, water-efficient technology, soil-plant relationships and building sales skills to meaningfully promote water conserving assessments to clients. Participating contractors were also trained on using an auditing application, which facilitated calculating the clients return on investment. The feedback received by participants was once again very positive, with many contractors beginning to realize new business opportunities. Participant feedback will continue to be incorporated to the redesign and delivery of WSIP for its fifth year in 2018.



Table 9 summarizes the WSIP assessments completed and their associated potential water savings. The average water savings per facility varied depending on the irrigation area. Since 2015, the average annual water savings per square meter of irrigation area assessed is about 262 litres.

Table 9: WSIP Assessments

Audit Year	Number of Assessments	Potential Water Savings Identified (m <sup>3</sup> )	Weighted Average Water Savings per Facility (m <sup>3</sup> /year)	Weighted Average Annual Water Savings per Square Meter of Irrigation Area (L/m <sup>2</sup> )
2015	7	5,503	786	246
2016	21	22,279	1,060	305
2017	61	43,300	709	247
<b>Total</b>	<b>89</b>	<b>71,083</b>	<b>798</b>	<b>262</b>

#### 4.3.2 Fusion Gardening® Pilot Project

In 2017, Region staff participated in a community event and maintained partnerships with three local garden retailers. Training on the Fusion Gardening® program was completed at all retail partner locations and promotional materials have been developed for each partner. Educational materials to support the program were created and have been distributed to retailers and residents at community events (see Appendix E: Fusion Gardening® Sample Marketing Material).



The Fusion Landscape Professional (FLP) Program aims to achieve market transformation by making Fusion landscapes an industry standard. This training and certification program was developed in partnership with Landscape Ontario and Peel Region. It aims to facilitate communication and collaboration between professionals involved in the design, installation, maintenance and irrigation of Fusion landscapes. Communication and cross-collaboration between these sectors is vital to the long-term success and function of Fusion landscapes. The first training session took place in November 2017; it was attended by 19 landscape professionals.

York Region’s collaboration with the TRCA on this project continued into 2017, with the goal of monitoring the stormwater benefits incurred when implementing Fusion Gardening. The monitoring processes will be evaluated in 2018 as part of the project evaluation.

### 4.3.2.1 Water-Efficient Demonstration Gardens

There are three Fusion demonstration gardens near the pilot area. Each garden showcases a different aspect of Fusion Gardening<sup>®</sup>, such as incorporating low impact design features, functional art or water-efficient plants.

## 4.4 Education and Outreach

York Region continued to offer its successful education and outreach programs, including water-efficient landscaping workshops and the York Children’s Water Festival (see **Appendix F: York Region Children’s Water Festival Invitation Poster**). Staff also developed and piloted an in-class Grade 5 water education program, which was launched in schools in 2014. The Region continued to conduct general water outreach, with over 650,000 touch points created in 2017 through events, and social media platforms (Figure 5).

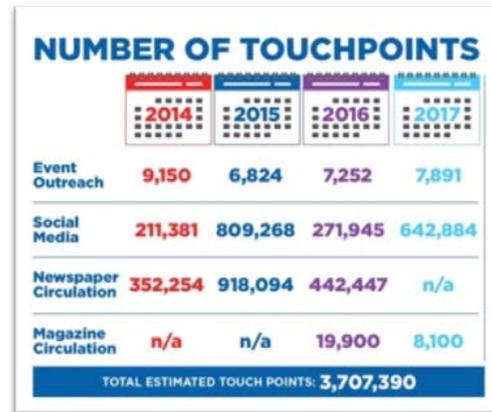


Figure 5: York Region Water Outreach Summary, 2014–2017

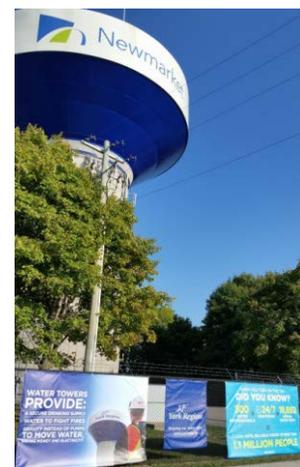
### 4.4.1 The “Water Is” Campaign

In 2017, the “Water Is” public campaign transitioned to the way the organization discusses the good work happening behind our water system. With the continued goal to raise public awareness about why water rates are increasing, the goal of this multi-year campaign is to help connect residents with the physical, spiritual and natural value of water and increase awareness of what goes into providing clean, safe, reliable and affordable drinking water.

### 4.4.2 Water Efficiency Outreach to New Canadians

In 2017, 2,049 new Canadians took part in 81 half-day environmental education programs at English as a Second Language (ESL) centres and Language Instruction for Newcomers to Canada (LINC) centres in York Region. These partnerships were delivered through the TRCA Multicultural Connections program in partnership with York Region. In addition, the Region worked with TRCA to build capacity to deliver similar programs in northern York Region. The Region is also working with LSRCA to add York Region information to their educational presentations and material.

In 2017, York Region staff attended 49 public outreach events and provided approximately 7,497 residents with a water conservation message. Many of these events targeted diverse audiences and allowed for participant input and ideas on water conservation through electronic surveys. This information will be used to better target our future campaigns towards new initiatives, rather than promoting practices already demonstrated by residents. Further opportunities to engage a multi-cultural audience are being explored.



## 4.5 Non-Revenue Water

York Region continues to offer distribution system leak detection support to their local municipalities using the International Water Association and American Water Works Association (IWA/AWWA) best practice methods.

The IWA Water Audit establishes the current levels of non-revenue water (NRW) and Infrastructure Leakage Index (ILI). Water audits conducted in each local municipality assess the level of non-revenue water and water loss (leakage) in each system. Once the audits are received they are reviewed by the Region and feedback is provided where necessary. The results are tracked and a trend analysis is completed to see how the values compare annually.

### 4.5.1 IWA Water Audit/Balance

Non-Revenue water is defined as those components (apparent losses, real losses and unbilled authorized consumption) of the system input volume that are not billed and produce no revenue. It can be used for operation and maintenance of the water system as well as for emergency services, such as fire flow.

In 2016, municipally-led IWA water audits were performed; the audits were analyzed and non-revenue water numbers were provided to the Region in 2017. The 2016 non-revenue water per cent by volume of water supplied for each municipality is shown in Table 10.

**Table 10: 2016 Non-Revenue Water Percentage by Volume of Water Supplied**

Municipality	2016 Non-Revenue Water (%)
Aurora	17.8
East Gwillimbury	21.9
Georgina	19.2
King	29.5
Markham	10.7
Newmarket	13.8
Richmond Hill	12.5
Vaughan	7.3
Whitchurch-Stouffville	12.8
<b>Weighted Average</b>	<b>11.3</b>

The average non-revenue water for York Region as a whole is 11.3 per cent. This is lower than the estimated average non-revenue water for North America, which ranges from 20 to 25 per cent.<sup>3</sup>

<sup>3</sup> Ress, Erin and Roberson, J. Alan. "[The Financial and Policy Implications of Water Loss,](#)" *American Water Works Association* 108, no. 2 (2016): E77-E86.

#### 4.5.2 Leak Detection Program

Infrastructure Leakage Index (ILI) is a performance indicator quantifying how well a distribution system is managed for the control of real losses (leakage) at the current operating pressure. Annual ILI values are tracked and a trend analysis is completed for each municipality. An ILI value of 1.0 is considered a “best managed” system. Table 11 shows the infrastructure leakage index measured by each municipality in 2016.

Table 11: 2016 Infrastructure Leakage Index by Municipality

Municipality	2016 Infrastructure Leakage Index
Aurora	1.07
East Gwillimbury	1.75
Georgina	1.79
King	4.16
Markham	1.47
Newmarket	1.54
Richmond Hill	1.98
Vaughan	1.20
Whitchurch-Stouffville	1.34

#### 4.5.3 Water Loss Tracking Tool

The Region initiated an IWA Audit Peer Review project in 2016. The scope of this project was to peer review the IWA audits, provide a report card to municipalities and develop an Excel-based Water Loss Tracking Tool. In 2017 York Region used this Tool to create Summary reports; these reports provide a high level analysis of the data and give an overview of water loss volumes.

### 4.6 Residential New Development

In 2017, staff continued to work with existing and new residential development program applicants. The Region continues to promote their sustainable development programs for new residential development. No new units were enrolled in the LEED® program, specifically designed for high-rise constructions, in 2017. For residential units up to three storeys, 313 homes were enrolled in the SIP program, adding to the total of 2,272 homes since 2014. In East Gwillimbury a sister program has been adopted, the Sustainable Development Incentive Program (SDIP). In 2017, 1,779 homes were enrolled in the SDIP program. All program-required elements must be verified by third-party professional engineers during construction and upon project completion. The programs will be undergoing a review and update in 2018, expected for completion in 2019.

### 4.7 Water Reuse

Water reclamation and reuse is defined as the treatment of wastewater to make it acceptable for reuse for beneficial purposes (e.g. agricultural irrigation, landscape irrigation, and industrial uses). Through York Region’s 2016 Water and Wastewater Master Plan and the Long Term Water Conservation Strategy Update, water reuse has been identified as an essential component in meeting the Region’s ambitious 2051 target of reducing per capita water

consumption to 150 litres per day. Furthermore, it is a critical measure in safeguarding valuable water supplies in the Lake Simcoe watershed.

To accommodate for planned growth in East Gwillimbury, Newmarket and Aurora, York Region has proposed the Upper York Water Reclamation Centre—a state-of-the-art wastewater treatment and water recovery facility in East Gwillimbury. It is envisioned to be a centre of excellence for sustainable and innovative wastewater treatment and reclaimed water use, based on proven advanced treatment technologies.

#### 4.7.1 Water Reuse Research Demonstration Project

To start laying the groundwork for future water reuse opportunities, York Region retained Black and Veatch along with a research team lead by the Soil Resources Group with collaboration from University of Waterloo and Agriculture/Agri-Food Canada to conduct a Water Reuse Research Demonstration Project. The Region is also consulting with other interested stakeholders, including the Ministry of the Environment and Climate Change, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Lake Simcoe Region Conservation Authority. Research from this project will help the Region to better understand the technical, environmental, economic and societal aspects of water reuse that will be used to inform the future development of a broader water reuse program for York Region.

The demonstration project will focus on the use of reclaimed water for irrigation of sod at an operating sod farm and will evaluate the effects of reclaimed water on plant health (e.g. salinity and nitrogen), soil properties, and water quality. In 2017 phase 1 of the project was completed, this phase included the following reports:

- Current Water Reuse Practices and Regulations
- Proposed Scope of Demonstration Project
- Evaluation of Research Proposals
- Effluent Sampling Plan
- Research Test Plan and Demonstration Project

Phase 2 or Project execution began in the final quarter of 2017 and will continue through to the end of 2019. Irrigation with reclaimed water is scheduled to occur during the 2018 and 2019 growing seasons from approximately May–October. Final findings, analysis and recommendations will be completed in the first quarter of 2020.

#### 4.7.2 Water Reuse in the ICI Sector

As part of the Water Use and Wastewater Quality Consultation Program offered by York Region, water reuse opportunities are also identified. Water reuse opportunities in the ICI sector are typically more challenging to implement, require more investigative studies and generally are higher risk (e.g. potential fouling of system where water is being reused, more stringent customer and/or regulatory requirements for reuse, novelty of opportunity). Once a facility's water consumption has been reduced as much as possible, the only way to extract more efficiency is to reuse the water to offset the consumption of fresh water. Typical examples of water reuse in ICI facilities include:

- Water reuse in cleaning process
  - Reuse final rinse water as the first rinse in a subsequent clean-in-place (CIP) cycle
  - Counter-current rinse tanks in metal finishing manufacturing
  - Reuse final rinse in a conveyor/belt cleaning process to first rinse (Figure 6)

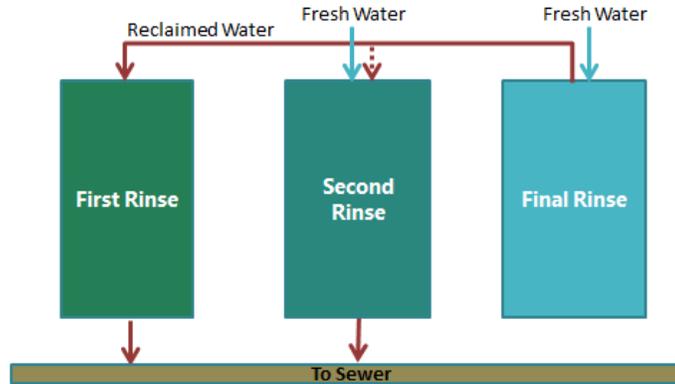


Figure 6: Water reuse of final rinse for cleaning as a first rinse

- Water reuse in cooling tower (Figure 7)
  - Use non-contact cooling water as cooling tower make up
  - Use reverse osmosis (RO) reject as cooling tower make up or cooling water
  - Reuse spent non-contact cooling water for cleaning
  - Reuse cooling water through a cooling tower and/or chiller

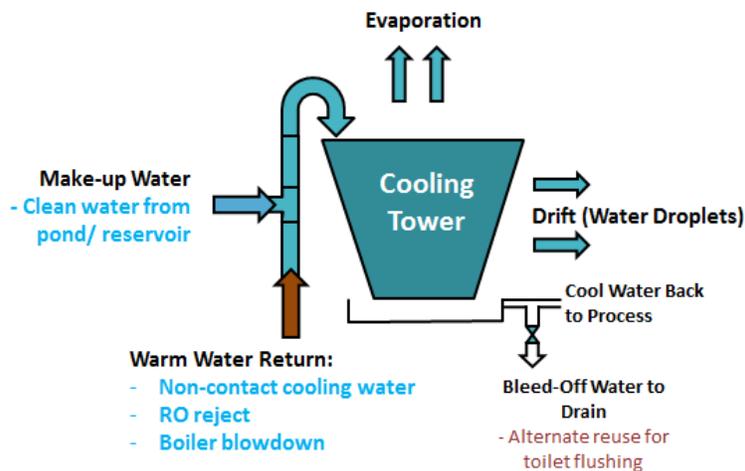


Figure 7: Water Reuse in Cooling Tower

- Water reuse in process and equipment
  - Reuse pump seal water through several pump systems (“daisy chain” seal water)
  - Recirculate vacuum pump seal water
- Water reuse from Reverse Osmosis/ Deionization system
  - Capture regeneration water in deionization systems and reuse in subsequent regeneration cycle
  - Capture and reuse filter backwash water
- Water reuse from rain water harvesting
  - Capture and reuse rainwater for non-process fixtures, cooling tower make up, non-contact cooling, irrigation, etc.

Since many of the above water reuse opportunities require process modification and/or the installation of additional equipment, they typically have higher capital costs and longer paybacks. For example, the payback for rainwater harvesting (RWH) is typically over 10 years (usually closer to 30 or 50 years) due to the high capital costs of installing an RWH system (storage tanks, pumps, pipes, controls, valves, filters, etc.). Therefore, to encourage implementation of water reuse opportunities, York Region completed a best-in-class review of its current program. As a result of this review, York Region has updated its water reuse incentive structure from \$0.30 to \$2.00/L/day.

## 4.8 Collaboration and Advocacy

York Region continues to work collaboratively with other stakeholders in multiple programs to take action, have input and comments in order to improve water conservation program and initiatives provincial wide.

### 4.8.1 *Collaboration with Other Regions*

York Region and Peel Region are now working collaboratively in multiple water conservation programs; Water Efficiency Replacement Equipment Incentives for small businesses, Fusion Landscaping Professionals program and the Water Smart Irrigation Professional (WSIP) for residential and businesses. The Regions establish similar water conservation initiatives and promote the programs together through their website and events. This collaboration will send a strong message to other Regions and encourage them to adopt the same conservation program and make it provincial wide. Toronto and Peel came up with common prescriptive programs to share ideas and get common water conservation programming initiatives.

York Region is taking the lead to expand collaboration opportunities with other regions, such as City of Toronto, Peel Region, City of Guelph and Region of Waterloo.

### 4.8.2 *Collaboration with Conservation Authorities*

York Region has partnered with Toronto and Region Conservation Authority (TRCA) for a long period of time, covering multiple sectors and subjects. The Stormwater team from the TRCA provides their expertise to assist with water conservation programs; the impact of stormwater is being monitored in the demonstration garden at Starbucks in 2016 to quantify the water conservation and stormwater runoff reduction benefits, and document operation and maintenance needs. Another demonstration garden at the Kline House, in Kleinburg, is expected to be installed in 2018 where monitoring will also occur. In addition to the monitoring component, TRCA will develop a modelling tool to assess community wide benefits of Fusion Gardening® i.e. stormwater and water conservation benefits. Data from both monitoring sites would be used to calibrate and validate the model to help ensure the model parameters actually reflect field conditions.

In addition to storm water monitoring York Region and the Sustainable Technologies Evaluation Program (STEP) and Sustainable Neighbourhood Retrofit Action Plan (SNAP) of the TRCA has initiated collaboration on a swimming pool pilot study. This study aims to determine how to best conserve water use in swimming pools during the summer. Another ongoing project is currently being undertaken with the Partners in Project Green (PPG) of the TRCA, which has brought in their networks and resources to help the ICI sectors who participated in Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive programs and would like to implement recommended opportunities.

### 4.8.3 Collaboration with Utility Providers

York Region is collaborating with many utility providers to promote the water conservation programs. Many of water conservation initiatives relate to other utilities, for example the replacement of water-efficient equipment will also reduce in energy usage. Alectra Utilities has the Business Refrigeration Incentives program and they agreed to promote York Region Water Efficiency Equipment Incentive program under their website as it directs to the same target group. York Region has also continued to co-promote incentives from other utilities such as Enbridge Gas, Hydro One, and Newmarket Hydro. This provides further incentive to any customer taking advantage of programs offered.

### 4.8.4 Collaboration with Local Municipalities

To increase collaboration between the Region and the local municipalities, the Region hosts the Water and Wastewater Liaison Committee. The committee was created to foster a One Water approach, help coordinate water and wastewater business, improve communications between Regional and local municipal water and wastewater staff, increase infrastructure efficiencies, and foster continuous improvement of processes across the local municipalities and York Region. It provides an opportunity for York Region and municipal staff to discuss capital projects, operation projects/programs, water resources, compliance, regulations/policy, stormwater management, collaboration opportunities, and lessons learned. Collaboration with the Local Municipalities is also critical to understand water consumption in the Region and to help minimize water loss and non-revenue water in the system.

In addition, York Region is one of the Municipal Eco Cluster Water Efficiency members. Partners in Project Green under TRCA hosts the EcoCluster meeting monthly to discuss about water conservation program progress and activities among Regional, local municipalities and stakeholder.

The Region is currently collaborating with East Gwillimbury on its *Thinking Green Development Standards* as they are seeking input for revisions on the program which will be presented to its council in 2018. The purpose of the document is to evaluate the sustainable elements of a development application (specifically Draft Plan of Subdivision and Site Plans) concurrently in the development review process.

### 4.8.5 Advocacy

York Region continuously advocates public policy to successfully provide water, wastewater, forestry and waste management services to York Region's growing population in a sustainable manner.

The Region hosts the Water Conservation Advisory Committee, an advisory body that consists of a variety of stakeholders including York Region residents, the MOECC, local municipalities, Ryerson University Professors, ICI business, school boards, Toronto and Region Conservation Authority (TRCA) and Lake Simcoe Region Conservation Authority (LSRCA). The committee is used as a forum to discuss, provide support, share knowledge, and receive feedback on water conservation programs and initiatives. In 2017 the committee met four times to provide feedback and guidance on program direction and implementation. Multiple presentations were shared including LSRCA on Winter Salt Management, York Region on Water Reuse including a SWOT (Strengths, weaknesses, opportunities and threats) analysis workshop, City of Markham on their Water Conservation Plan.

York Region also advocates through other external committees including Ontario Water Works Associations, Water Efficiency Committee and the Canadian Water and Wastewater Associations, National Water Efficiency Committee. Both of the committees' objectives are to

promote programs, policies and legislation to ensure sustainable use of water resources, foster innovation and encourage the use of water-efficient technologies and practices.

## 4.9 Big Data Analytics

In 2017 the platform was improved even further, improving the reports that can be generated from the application. A search feature was also added to make looking up individual water use simpler. In addition, a security feature was implemented which allows the individual municipality user to view the water user data within their municipality boundary only. This is a step towards York Region's commitment to privacy.

The Region also created heat maps using GIS to identify where high water users are located and target their water conservation programs accordingly. These heat maps will be generated and compared on an annual basis to study and evaluate trends.

Some examples of GIS heat maps that can be generated are:

- Figure 8: 2017 Annual Water Consumption
- Figure 9: 2017 Annual ICI Water Consumption
- Figure 10: 2017 Annual Residential Water
- Figure 11: 2017 Outdoor Single-Family Water Consumption
- Figure 12: 2017 Water Audited ICI Facilities

As the heat maps in **Figure 8** show, the majority of high water users (ICI and residential) are concentrated near the border between York Region and the City of Toronto—specifically in the municipalities of Vaughan, Richmond Hill, and Markham. Together, those three municipalities are home to the majority of York Region's total population.

The prominent red and dark orange areas in **Figure 9** correspond with the high number of businesses, shopping centres and big box stores concentrated in southern Vaughan and southern Markham. Most of the ICI high water users that participated in York Region's Water-Use and Wastewater Quality Consultation program are from these areas.

The red and dark orange areas in **Figure 10** correspond with areas of high residential population density. These residential high water users also consume large volumes of water for outdoor water use, as seen in **Figure 11**. As a result, York Region's water conservation programs and pilot projects (such as the Fusion Gardening<sup>®</sup> pilot in Kleinburg) are targeted to these groups of residents.

**Figure 12** shows facilities audited by York Region; the majority of audits were completed for ICI facilities in southern Vaughan.

# 2017 Annual Water Consumption In York Region

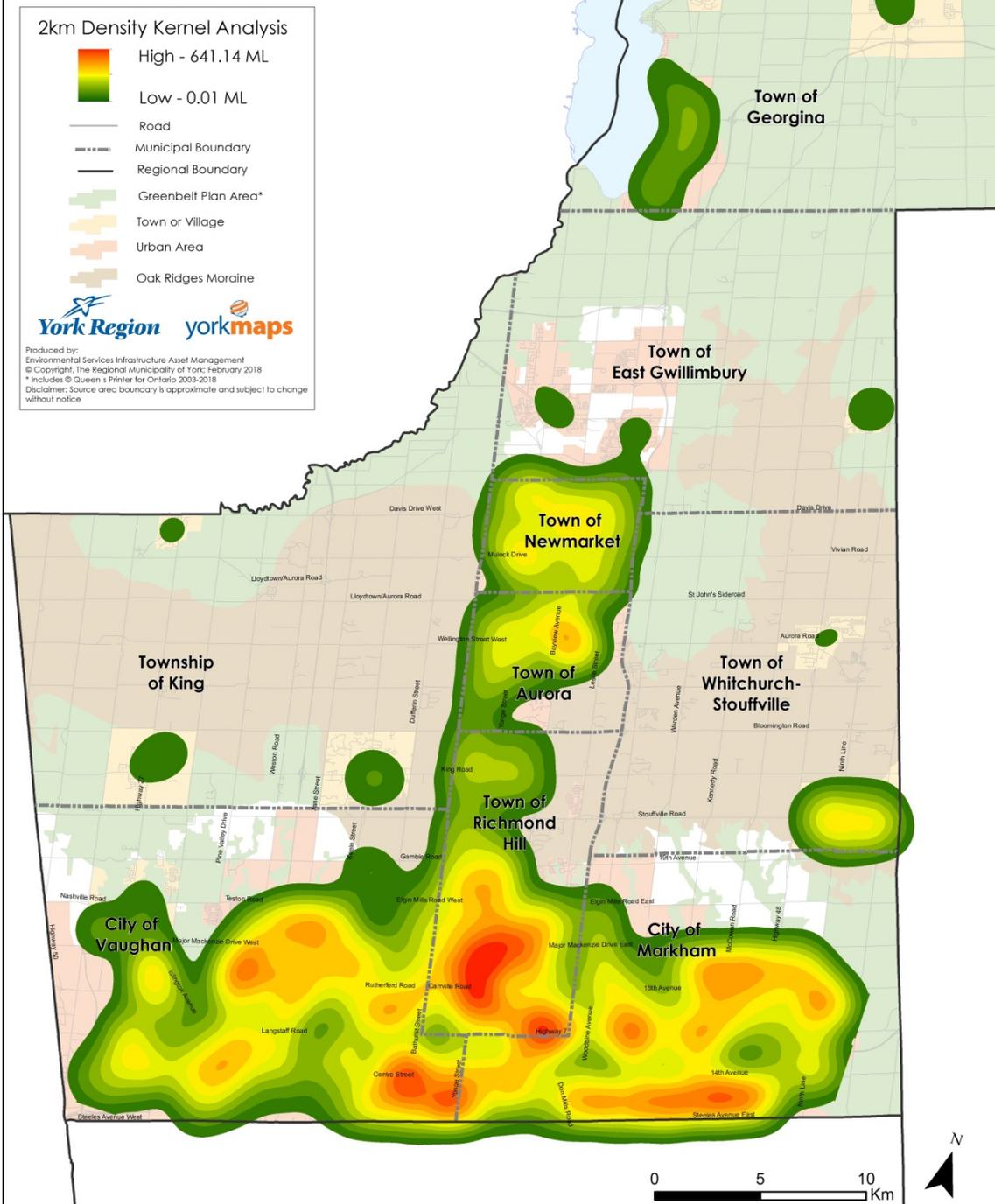
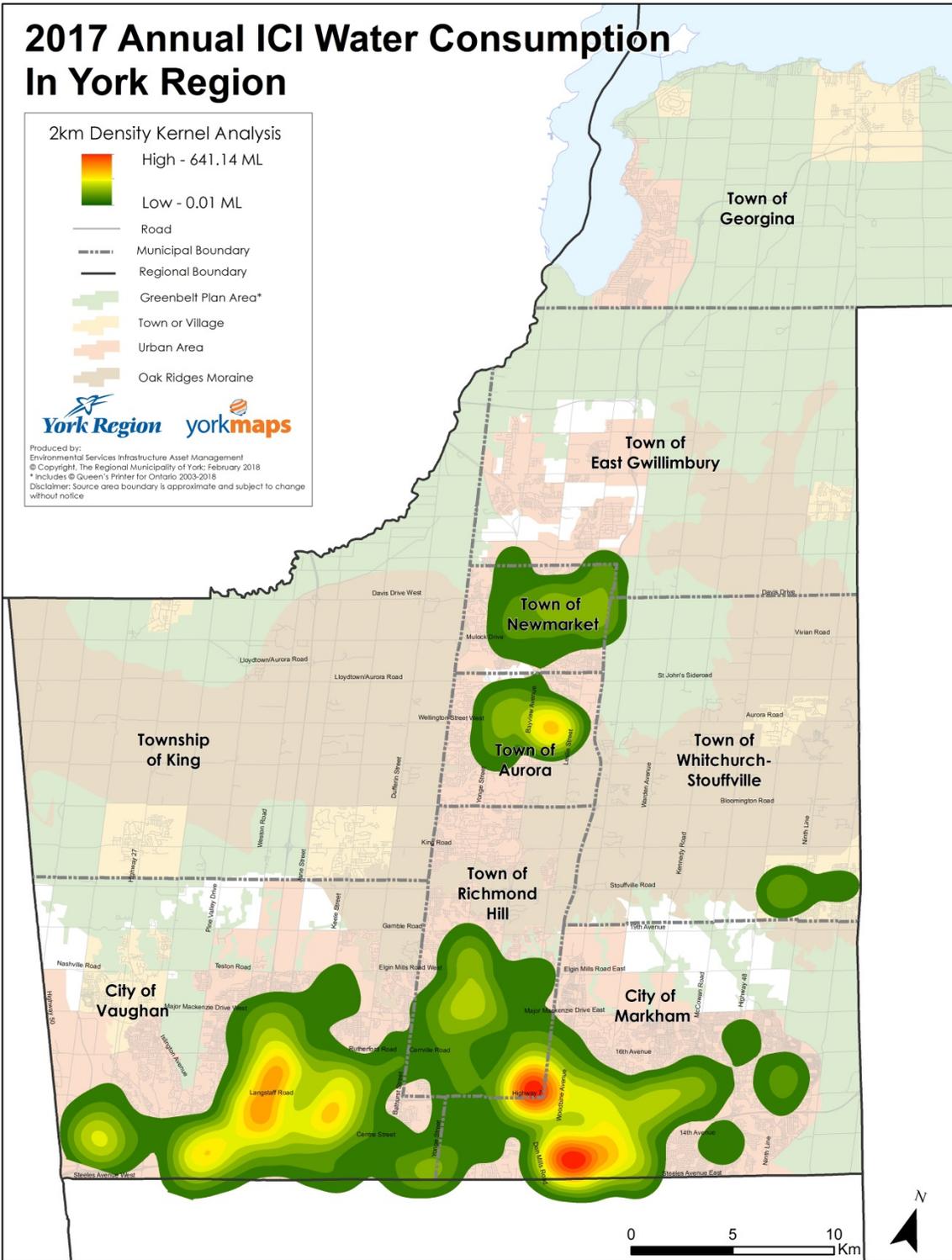


Figure 8: 2017 Annual Water Consumption



**Figure 9: 2017 Annual ICI Water Consumption**

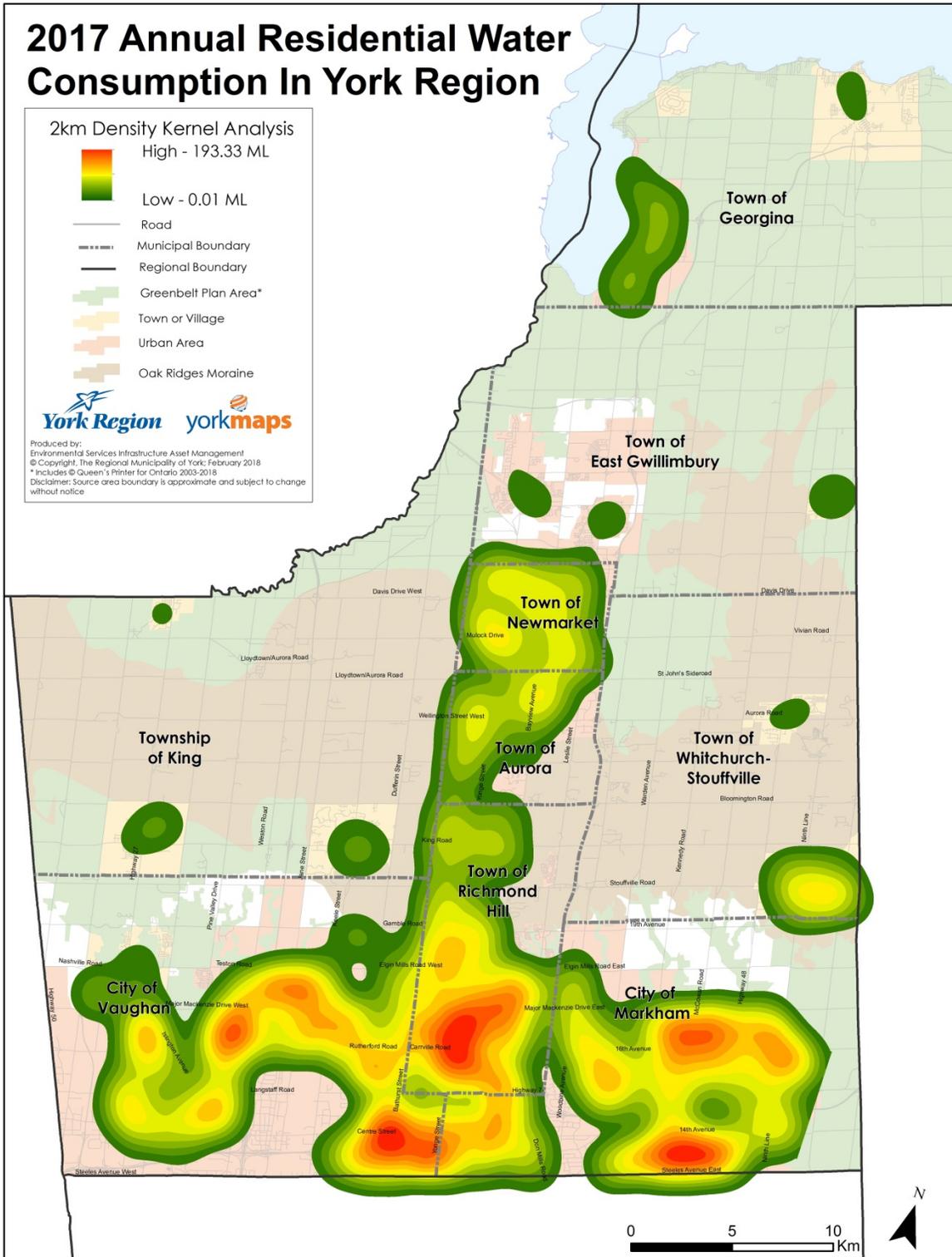


Figure 10: 2017 Annual Residential Water Consumption

# 2017 Outdoor Single-Family Residential Consumption

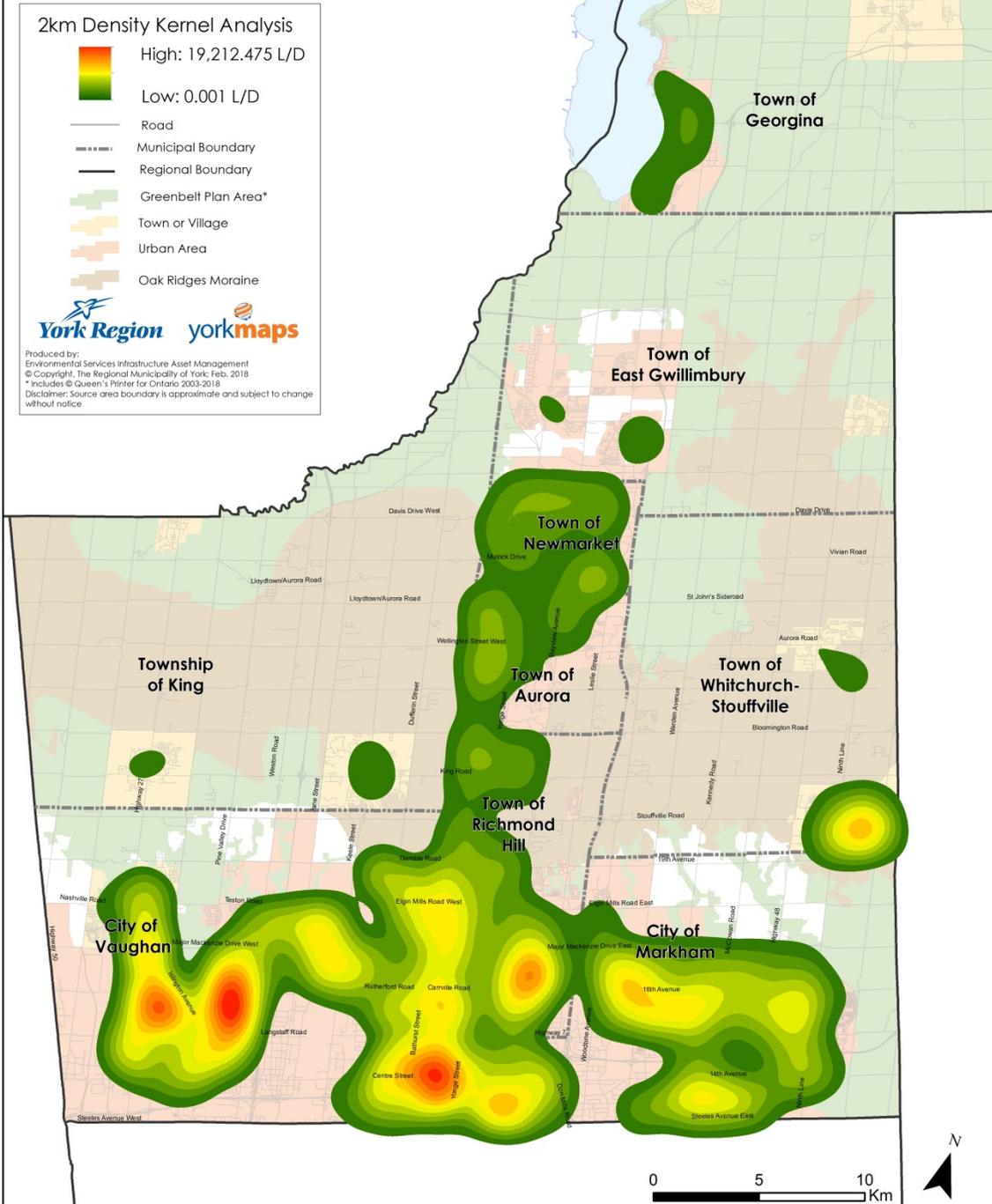


Figure 11: 2017 Outdoor Single-Family Water Consumption

# 2017 Audited ICI Facilities In York Region

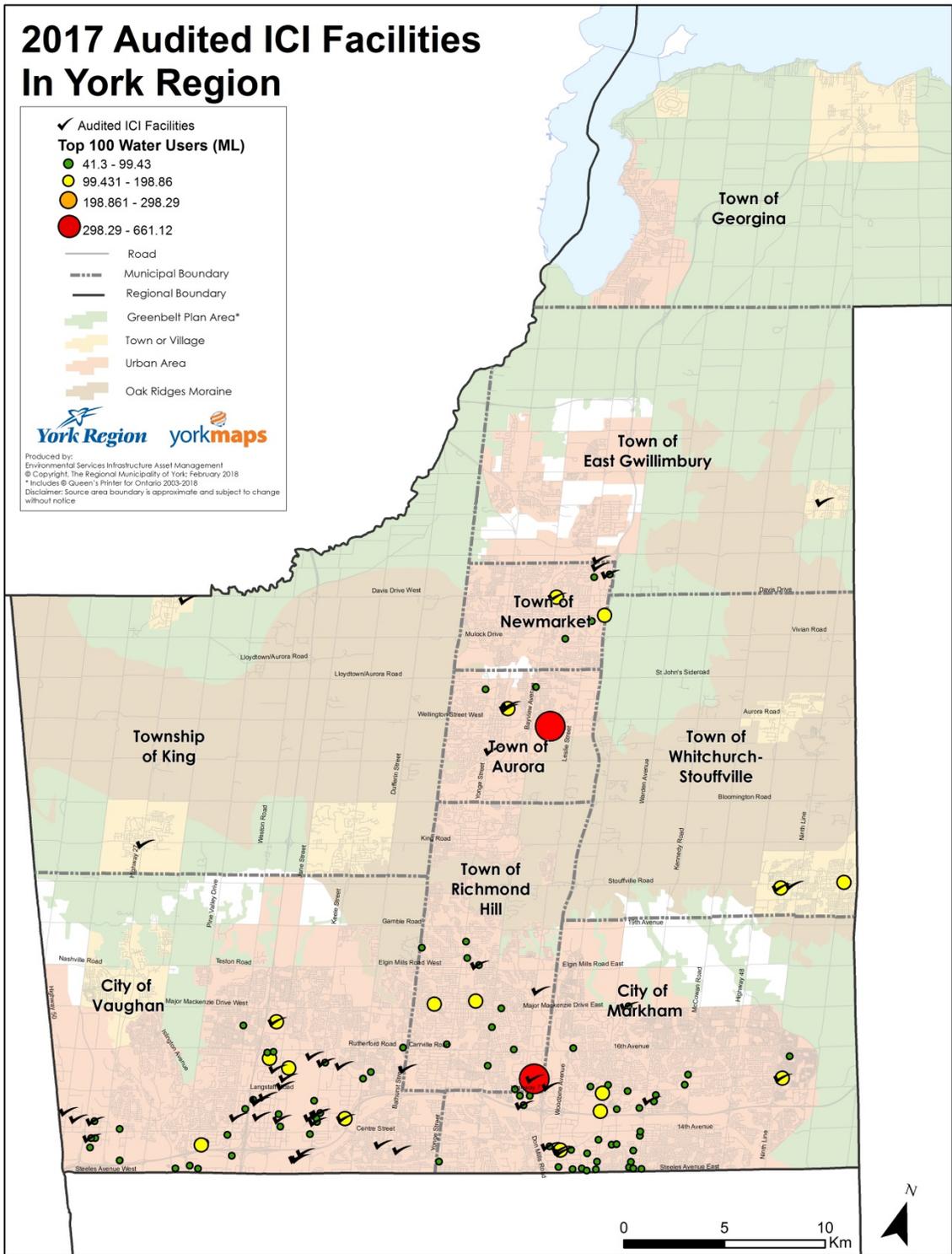


Figure 12: 2017 Water Audited ICI Facilities



## 5.0 Conclusion

York Region continues to demonstrate strong leadership in promoting water conservation. Since 2010 the Region has achieved overall savings of 26.6 million litres per day; this is enough water for more than 140,000 people. Despite increases in the Region's population, water demand has remained relatively flat—demonstrating the Region's commitment to water conservation.

The Region continues to pursue water reuse as an important strategy in achieving the Region's aspirational 2051 target of 150 litres per person per day, reaching 187 LCD this year. Through multiple programs, York Region has identified significant water savings through assessments and audits. The Outdoor Peak Demand Reduction program has continued to make great strides this year, with a total of 89 irrigation assessments completed to date. These reports identified estimated water savings of 71,083 m<sup>3</sup> per year. Through the ICI consultation program, the number of audits has also grown, with the total number of completed audits now reaching 44 to date. An estimated total of 777,360 m<sup>3</sup> per year has been identified for water savings as a result of these assessments.

To accommodate for planned growth, water reuse is quickly becoming a priority throughout the Region. The Region is planning to implement a Water Reuse Research Demonstration Project, looking at the application of water reuse in an agricultural setting. The Region has also increased their water reuse incentive rate under the existing water conservation programs for businesses to encourage the implementation of water reuse opportunities. Currently, there are no regulatory frameworks that support robust water reuse applications in Ontario.

This year York Region also expanded its social media marketing presence for water conservation, reaching 642,884 touchpoints in 2017, over double the 271,945 touchpoints from 2016. The Region also continued its outreach with new-immigrant families and with children, hosting outreach events throughout the year.

Moving forward the Region will continue to investigate and implement best-in-class technology and practices, showing the commitment to improving water management, reducing consumption and integrating the LTWCS into the Regions One Water Action Plan.

## Glossary of Acronyms

AWWA	American Water Works Association
CWWA	Canadian Water Works Association
GIS	Geographic Information System
GTA	Greater Toronto Area
ICI	Industrial, Commercial or Institutional
IEA	Individual Environmental Assessment
ILI	Infrastructure Leakage Index
IWA	International Water Association
LCD	Litres per Capita per Day
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LSRCA	Lake Simcoe Region Conservation Authority
LTWCS	Long Term Water Conservation Strategy
MLD	MegaLitres per Day
MOECC	Ministry of Environment and Climate Change
NRW	Non-Revenue Water
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OTC	Once Through Cooling
OWWA	Ontario Water Works Association
PPG	Partners in Project Green
PTTW	Permit to Take Water
RWH	Rainwater Harvesting
SEC	South East Collector
SIP	Servicing Incentive Program
SNAP	Sustainable Neighbourhood Retrofit Action Plan
STEP	Sustainable Technologies Evaluation Program
TRCA	Toronto and Region Conservation Authority
WCD	Water Consumption Database
WFT	Water For Tomorrow
WSIP	Water Smart Irrigation Professionals
YR	York Region

## Appendix A: Intra-Basin Transfer Summary 2017

The Regional Municipality of York is submitting the information below in accordance with Schedule B to the following Permits to Take Water that relate to York Region's intra-basin transfer agreement between the Permit Holders and York Region, the Related Transferor, and that supply water to be transferred to York Region (see *Appendix B: Permits to Take Water (PTTWs)* for the full permits):

- PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016
- PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016
- PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016
- PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016
- PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016

As stipulated in Schedule B of the aforementioned permits, Condition (e) requires York Region to report, no later than March 31<sup>st</sup> of every year, on monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. **Table 12** lists total monthly volumes transferred from the Lake Ontario watershed into the Lake Huron watershed with return flow to Lake Ontario. In 2017, York Region's average daily intra-basin transfer amount was 28.153 ML.

**Table 12: Intra-Basin Transfer Volumes**

Month (2017)	Total Intra-Basin Transfer Volume (m <sup>3</sup> )
January	840,821
February	744,880
March	833,001
April	758,539
May	870,267
June	935,232
July	903,862
August	929,558
September	928,305
October	856,284
November	804,101
December	871,010
<b>Total</b>	<b>10,275,860</b>

## Appendix B: Permits to Take Water (PTTWs)

PTTW No. 1866-A6QHRP, page 1 of 8



Ministry of the Environment and Climate Change  
Ministère de l'Environnement et de l'Action en  
matière de changement climatique

---

AMENDED PERMIT TO TAKE WATER  
Surface Water  
NUMBER 1866-A6QHRP

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

City of Toronto  
55 John Street, 18th Floor  
Toronto, Ontario, M5V 3C6  
Canada

*For the water taking from:* Lake Ontario: Toronto Island Treatment Plant

*Located at:* 446 Lakeshore Ave  
Toronto

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

### **DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Toronto District Office.
- (e) "Permit" means this Permit to Take Water No. 1866-A6QHRP including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means City of Toronto.
- (g) "OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated October 23, 1995 and signed by H.A Taniguichi, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

**2. General Conditions and Interpretation**

- 2.1 Inspections  
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 Other Approvals  
The issuance of, and compliance with this Permit, does not:
  - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

**2.3 Information**

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.

**2.4 Rights of Action**

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

**2.5 Severability**

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

**2.6 Conflicts**

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

**3. Water Takings Authorized by This Permit**

**3.1 Expiry**

This Permit expires on **December 31, 2025**. No water shall be taken under authority of this Permit after the expiry date.

**3.2 Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Ontario: Toronto Island Treatment Plant	Lake	Municipal	Water Supply	362,000	24	550,000,000	365	17 630423 4830396
						Total Taking:			

**4. Monitoring**

4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.

4.2 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

**5. Impacts of the Water Taking**

**5.1 Notification**

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email: [ERTTribunalsecretary@ontario.ca](mailto:ERTTribunalsecretary@ontario.ca)*

AND

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
8th Floor  
5775 Yonge St  
Toronto ON M2M 4J1  
Fax: (416) 325-6347*

*Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:*

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 91-P-3041, issued on 1996/02/12.

Dated at Toronto this 23 rd day of March, 2016.



Ross Lashbrook  
Director, Section 34.1  
*Ontario Water Resources Act*, R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 1866-A6QHRP, dated March 23, 2016.

1. Letter to Steve Klose, Director Section 34, Ministry of Environment and Energy (MOEE) from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, requesting an amendment to the Permit to Take Water, and dated October 23, 1995.
2. Letter to Robert Ryan, Senior Approvals Officer, MOEE from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, enclosing additional information, and dated January 2, 1996.

**Schedule B**

This "Schedule B" forms part of Permit to Take Water 1866-A6QHRP issued to the City of Toronto.

- a) This Schedule B recognizes The Regional Municipality of York (York Region) as a Related Transferor (as defined in the OWRA s. 34.5 (1) and O. Reg. 387/04 s. 11) for water taken under the authority of this Permit to Take Water by the Permit Holder.
- b) The total amount of water currently deemed to be transferred (i.e. baseline amount) by York Region is 105 million litres per day as considered and established in Prior Notice and Consultation under the Great Lakes Charter prior to December 31, 2014.
- c) Permits to Take Water that relate to this intra-basin transfer agreement between the Permit Holders and the Related Transferor and that supply water to be transferred to York Region are:  
  
PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016  
PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016  
PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016  
PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016  
PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016
- d) The total transferable amount of 105 million litres per day is a combined amount for all Lake Ontario sources identified under the Permits to Take Water listed in condition c).
- e) York Region shall monitor and report annually to the MOECC Central Region Director and to the MNRF Natural Resources Conservation Policy Branch Director monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. The annual report shall be submitted no later than March 31<sup>st</sup> each year.
- f) York Region shall carry out the Long-Term Water Conservation Strategy dated March 31, 2011, as may be amended from time to time, as outlined in the joint MOECC and MNRF letter to The Regional Municipality of York, dated September 14, 2010.



Ministry of the Environment and Climate Change  
Ministère de l'Environnement et de l'Action en  
matière de changement climatique

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AMENDED PERMIT TO TAKE WATER  
Surface Water  
NUMBER 0726-A6QJTA

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

City of Toronto  
55 John Street, 18th Floor  
Toronto, Ontario, M5V 3C6  
Canada

*For the water taking from:* Lake Ontario: R.C Harris Treatment Plant

*Located at:* 2701 Queen St E  
Toronto

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Toronto District Office.
- (e) "Permit" means this Permit to Take Water No. 0726-A6QJTA including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means City of Toronto.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated October 23, 1995 and signed by H. A. Taniguchi, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

**2. General Conditions and Interpretation**

- 2.1 **Inspections**  
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 **Other Approvals**  
The issuance of, and compliance with this Permit, does not:
  - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

**2.3 Information**

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.

**2.4 Rights of Action**

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

**2.5 Severability**

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

**2.6 Conflicts**

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

**3. Water Takings Authorized by This Permit**

**3.1 Expiry**

This Permit expires on **December 31, 2025**. No water shall be taken under authority of this Permit after the expiry date.

**3.2 Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Ontario: R.C Harris Treatment Plant	Lake	Municipal	Water Supply	930,600	24	1,340,000,000	365	17 638847 4836905
						<b>Total Taking:</b>			

**4. Monitoring**

- 4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.
- 4.2 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

**5. Impacts of the Water Taking**

- 5.1 **Notification**  
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.
- 5.2 **For Surface-Water Takings**  
The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of

water or with the natural functions of the stream.

**6. Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email: [ERTTribunalsecretary@ontario.ca](mailto:ERTTribunalsecretary@ontario.ca)*

AND

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
8th Floor  
5775 Yonge St  
Toronto ON M2M 4J1  
Fax: (416) 325-6347*

*Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:*

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 91-P-3040, issued on 1996/02/12.

Dated at Toronto this 23 rd day of March, 2016.



Ross Lashbrook  
Director, Section 34.1  
*Ontario Water Resources Act*, R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 0726-A6QJTA, dated March 23, 2016.

1. Letter to Steve Klose, Director Section 34, Ministry of Environment and Energy (MOEE) from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, requesting an amendment to the Permit to Take Water, and dated October 23, 1995.
2. Letter to Robert Ryan, Senior Approvals Officer, MOEE from H.A Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, enclosing additional information, and dated January 2, 1996.

**Schedule B**

This "Schedule B" forms part of Permit to Take Water 0726-A6QJTA issued to the City of Toronto.

- a) This Schedule B recognizes The Regional Municipality of York (York Region) as a Related Transferor (as defined in the OWRA s. 34.5 (1) and O. Reg. 387/04 s. 11) for water taken under the authority of this Permit to Take Water by the Permit Holder.
- b) The total amount of water currently deemed to be transferred (i.e. baseline amount) by York Region is 105 million litres per day as considered and established in Prior Notice and Consultation under the Great Lakes Charter prior to December 31, 2014.
- c) Permits to Take Water that relate to this intra-basin transfer agreement between the Permit Holders and the Related Transferor and that supply water to be transferred to York Region are:  
  
PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016  
PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016  
PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016  
PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016  
PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016
- d) The total transferable amount of 105 million litres per day is a combined amount for all Lake Ontario sources identified under the Permits to Take Water listed in condition c).
- e) York Region shall monitor and report annually to the MOECC Central Region Director and to the MNRF Natural Resources Conservation Policy Branch Director monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. The annual report shall be submitted no later than March 31<sup>st</sup> each year.
- f) York Region shall carry out the Long-Term Water Conservation Strategy dated March 31, 2011, as may be amended from time to time, as outlined in the joint MOECC and MNRF letter to The Regional Municipality of York, dated September 14, 2010.



Ministry of the Environment and Climate Change  
Ministère de l'Environnement et de l'Action en  
matière de changement climatique

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**AMENDED PERMIT TO TAKE WATER**  
Surface Water  
NUMBER 6604-A6QKEB

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

City of Toronto  
55 John Street, 18th Floor  
Toronto, Ontario, M5V 3C6  
Canada

*For the water taking from:* Lake Ontario: F.J. Horgan Treatment Plant

*Located at:* 210 Copperfield Rd  
Toronto

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Toronto District Office.
- (e) "Permit" means this Permit to Take Water No. 6604-A6QKEB including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means City of Toronto.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated October 23, 1995 and signed by H.A. Taniguchi, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

**2. General Conditions and Interpretation**

**2.1 Inspections**

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

**2.2 Other Approvals**

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

**2.3 Information**

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.

**2.4 Rights of Action**

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

**2.5 Severability**

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

**2.6 Conflicts**

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

**3. Water Takings Authorized by This Permit**

**3.1 Expiry**

This Permit expires on **December 31, 2025**. No water shall be taken under authority of this Permit after the expiry date.

**3.2 Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Ontario: F.J. Horgan Treatment Plant	Lake	Municipal	Water Supply	666,700	24	960,000,000	365	17 605135 4837883
						Total Taking:			

**4. Monitoring**

- 4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.
- 4.2 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

**5. Impacts of the Water Taking**

- 5.1 Notification  
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.
- 5.2 For Surface-Water Takings  
The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

**6. Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email: [ERTTribunalsecretary@ontario.ca](mailto:ERTTribunalsecretary@ontario.ca)*

AND

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
8th Floor  
3775 Yonge St  
Toronto ON M2M 4J1  
Fax: (416) 325-6347*

*Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:*

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 91-P-3039, issued on 1996/02/12.

Dated at Toronto this 23 rd day of March, 2016.



Ross Lashbrook  
Director, Section 34.1  
*Ontario Water Resources Act* , R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 6604-A6QKEB, dated March 23, 2016.

1. Letter to Steve Klose, Director Section 34, Ministry of Environment and Energy (MOEE) from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, requesting an amendment to the Permit to Take Water, and dated October 23, 1995.
2. Letter to Robert Ryan, Senior Approvals Officer, MOEE from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, enclosing additional information, and dated January 2, 1996.

**Schedule B**

This "Schedule B" forms part of Permit to Take Water 6604-A6QKEB issued to the City of Toronto.

- a) This Schedule B recognizes The Regional Municipality of York (York Region) as a Related Transferor (as defined in the OWRA s. 34.5 (1) and O. Reg. 387/04 s. 11) for water taken under the authority of this Permit to Take Water by the Permit Holder.
- b) The total amount of water currently deemed to be transferred (i.e. baseline amount) by York Region is 105 million litres per day as considered and established in Prior Notice and Consultation under the Great Lakes Charter prior to December 31, 2014.
- c) Permits to Take Water that relate to this intra-basin transfer agreement between the Permit Holders and the Related Transferor and that supply water to be transferred to York Region are:  
  
PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016  
PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016  
PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016  
PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016  
PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016
- d) The total transferable amount of 105 million litres per day is a combined amount for all Lake Ontario sources identified under the Permits to Take Water listed in condition c).
- e) York Region shall monitor and report annually to the MOECC Central Region Director and to the MNRF Natural Resources Conservation Policy Branch Director monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. The annual report shall be submitted no later than March 31<sup>st</sup> each year.
- f) York Region shall carry out the Long-Term Water Conservation Strategy dated March 31, 2011, as may be amended from time to time, as outlined in the joint MOECC and MNRF letter to The Regional Municipality of York, dated September 14, 2010.



Ministry of the Environment and Climate Change  
Ministère de l'Environnement et de l'Action en  
matière de changement climatique

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AMENDED PERMIT TO TAKE WATER  
Surface Water  
NUMBER 0016-A6QKN2

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

City of Toronto  
55 John Street, 18th Floor  
Toronto, Ontario, M5V 3C6  
Canada

*For the water taking from:* Lake Ontario: R.L. Clark Treatment Plant

*Located at:* 45 23rd St  
Toronto

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Toronto District Office.
- (e) "Permit" means this Permit to Take Water No. 0016-A6QKN2 including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means City of Toronto.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated October 23, 1995 and signed by H.A. Taniguchi, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

**2. General Conditions and Interpretation**

- 2.1 **Inspections**  
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.
- 2.2 **Other Approvals**  
The issuance of, and compliance with this Permit, does not:
  - (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

**2.3 Information**

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.

**2.4 Rights of Action**

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

**2.5 Severability**

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

**2.6 Conflicts**

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

**3. Water Takings Authorized by This Permit**

**3.1 Expiry**

This Permit expires on **December 31, 2025**. No water shall be taken under authority of this Permit after the expiry date.

**3.2 Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Ontario: R.L. Clark Treatment Plant	Lake	Municipal	Water Supply	653,000	24	940,000,000	365	17 619741 4827728
						<b>Total Taking:</b>			

**4. Monitoring**

- 4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.
- 4.2 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

**5. Impacts of the Water Taking**

- 5.1 **Notification**  
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.
- 5.2 **For Surface-Water Takings**  
The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

**6. Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email: [ERTTribunaalsecretary@ontario.ca](mailto:ERTTribunaalsecretary@ontario.ca)*

*AND*

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
8th Floor  
5775 Yonge St  
Toronto ON M2M 4J1  
Fax: (416) 325-6347*

*Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:*

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 91-P-3042, issued on 1996/02/12.

Dated at Toronto this 23 rd day of March, 2016.



Ross Lashbrook  
Director, Section 34.1  
*Ontario Water Resources Act*, R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 0016-A6QKN2, dated March 23, 2016.

1. Letter to Steve Klose, Director Section 34, Ministry of Environment and Energy (MOEE) from H.A. Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, requesting an amendment to the Permit to Take Water, and dated October 23, 1995.
2. Letter to Robert Ryan, Senior Approvals Officer, MOEE from H.A Taniguichi, Director of Water Supply, Municipality of Metropolitan Toronto, enclosing additional information, and dated January 2, 1996.

**Schedule B**

This "Schedule B" forms part of Permit to Take Water 0016-A6QKN2 issued to the City of Toronto.

- a) This Schedule B recognizes The Regional Municipality of York (York Region) as a Related Transferor (as defined in the OWRA s. 34.5 (1) and O. Reg. 387/04 s. 11) for water taken under the authority of this Permit to Take Water by the Permit Holder.
- b) The total amount of water currently deemed to be transferred (i.e. baseline amount) by York Region is 105 million litres per day as considered and established in Prior Notice and Consultation under the Great Lakes Charter prior to December 31, 2014.
- c) Permits to Take Water that relate to this intra-basin transfer agreement between the Permit Holders and the Related Transferor and that supply water to be transferred to York Region are:  
  
PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016  
PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016  
PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016  
PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016  
PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016
- d) The total transferable amount of 105 million litres per day is a combined amount for all Lake Ontario sources identified under the Permits to Take Water listed in condition c).
- e) York Region shall monitor and report annually to the MOECC Central Region Director and to the MNRF Natural Resources Conservation Policy Branch Director monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. The annual report shall be submitted no later than March 31<sup>st</sup> each year.
- f) York Region shall carry out the Long-Term Water Conservation Strategy dated March 31, 2011, as may be amended from time to time, as outlined in the joint MOECC and MNRF letter to The Regional Municipality of York, dated September 14, 2010.



Ministry of the Environment and Climate Change  
Ministère de l'Environnement et de l'Action en  
matière de changement climatique

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**AMENDED PERMIT TO TAKE WATER**  
Surface Water  
NUMBER 1064-A6KQKQ

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

The Regional Municipality of Peel  
10 Peel Centre Dr  
Brampton, Ontario, L6T 4B9  
Canada

*For the water*

*taking from:* Lake Ontario: Lakeview Water Treatment Plant

Lake Ontario: Lorne Park Water Treatment Plant

*Located at:* Lakeview- 920 East Ave  
Mississauga, Regional Municipality of Peel

Lorne Park- 1180 Lakeshore Rd W  
Mississauga, Regional Municipality of Peel

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Halton-Peel District Office.
- (e) "Permit" means this Permit to Take Water No. 1064-A6KQKQ including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.

- (f) "Permit Holder" means The Regional Municipality of Peel.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

**1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated April 24, 2009 and signed by Andrew Farr for the Lakeview Water Treatment Plant and dated October 1, 2007 and signed by Andrew Farr for the Lome Park Water Treatment Plant, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

**2. General Conditions and Interpretation**

**2.1 Inspections**

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

**2.2 Other Approvals**

The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

**2.3 Information**

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

**2.4 Rights of Action**

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

**2.5 Severability**

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

**2.6 Conflicts**

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

**3. Water Takings Authorized by This Permit**

**3.1 Expiry**

This Permit expires on **November 30, 2020**. No water shall be taken under authority of this Permit after the expiry date.

**3.2 Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Lake Ontario: Lakeview Water Treatment Plant	Lake	Municipal	Water Supply	888,889	24	1,250,000,000	365	17 617200 4825400
2	Lake Ontario: Lorne Park Water Treatment Plant	Lake	Municipal	Water Supply	399,306	24	575,000,000	365	17 614193 4820155
						<b>Total Taking:</b>			

**4. Monitoring**

4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter. A separate record shall be maintained for each source. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.

4.2 The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> of every year, the daily water taking data collected and recorded, as per Condition 4.1, for the previous year to the ministry's Water Taking Reporting System.

4.3 Any application submitted to the Ministry for renewal or amendment of this Permit shall

be accompanied by all records required by the conditions of this Permit.

**5. Impacts of the Water Taking**

**5.1 Notification**

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

**5.2 For Surface-Water Takings**

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

**6. Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370  
Email: [ERTTribunalsecretary@ontario.ca](mailto:ERTTribunalsecretary@ontario.ca)*

AND

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
8th Floor  
5775 Yonge St  
Toronto ON M2M 4J1  
Fax: (416) 325-6347*

*Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:*

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 5021-83SL3X, issued on 2010/11/29.

Dated at Toronto this 23 rd day of March, 2016.



Ross Lashbrook  
Director, Section 34.1  
Ontario Water Resources Act, R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 1064-A6KQKQ, dated March 23, 2016.

1. Application for Permit to Take Water renewal for the Lakeview Water Treatment Plant signed by Andrew Farr and dated April 21, 2009.
2. Application for Permit to Take Water renewal for the Lorne Park Water Treatment Plant signed by Andrew Farr and dated October 1, 2007.
3. Letter titled "Regional Municipality of Peel: Increase in Existing Permit to Take Water 6715-678SQX dated December 6, 2004 Lakeview Water Treatment Plant" prepared by CH2MHILL, signed by Arun Jain, P.Eng., and dated February 18, 2010.
4. Letter Report - GENIVAR Ontario Inc. Oct. 3, 2007. Permit to Take Water Application Lorne Park Water Treatment Plant Expansion. Project # 5920 signed by Martin Gravel and Muin Husain of GENIVAR.

**Schedule B**

This "Schedule B" forms part of Permit to Take Water 1064-A6KQKQ issued to The Regional Municipality of Peel.

- a) This Schedule B recognizes The Regional Municipality of York (York Region) as a Related Transferor (as defined in the OWRA s. 34.5 (1) and O. Reg. 387/04 s. 11) for water taken under the authority of this Permit to Take Water by the Permit Holder.
- b) The total amount of water currently deemed to be transferred (i.e. baseline amount) by York Region is 105 million litres per day as considered and established in Prior Notice and Consultation under the Great Lakes Charter prior to December 31, 2014.
- c) Permits to Take Water that relate to this intra-basin transfer agreement between the Permit Holders and the Related Transferor and that supply water to be transferred to York Region are:  
  
PTTW No. 1866-A6QHRP, issued to the City of Toronto on March 23, 2016  
PTTW No. 0726-A6QJTA, issued to the City of Toronto on March 23, 2016  
PTTW No. 6604-A6QKEB, issued to the City of Toronto on March 23, 2016  
PTTW No. 0016-A6QKN2, issued to the City of Toronto on March 23, 2016  
PTTW No. 1064-A6KQKQ, issued to The Regional Municipality of Peel on March 23, 2016
- d) The total transferable amount of 105 million litres per day is a combined amount for all Lake Ontario sources identified under the Permits to Take Water listed in condition c).
- e) York Region shall monitor and report annually to the MOECC Central Region Director and to the MNRF Natural Resources Conservation Policy Branch Director monthly volumes and a calculated daily average amount of its intra-basin transfer in the preceding calendar year. The annual report shall be submitted no later than March 31<sup>st</sup> each year.
- f) York Region shall carry out the Long-Term Water Conservation Strategy dated March 31, 2011, as may be amended from time to time, as outlined in the joint MOECC and MNRF letter to The Regional Municipality of York, dated September 14, 2010.

# Appendix C: Arla Foods Case Study

Page 1



York Region's Industrial, Commercial and Institutional (ICI) Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive Programs

## CASE STUDY: ARLA FOODS

**Arla Foods Inc. (Arla Foods), a Canadian subsidiary of Arla Foods in Denmark, is a major supplier of fresh, specialty cheeses.**

At Arla Foods, environmental sustainability is a top priority. The company's participation in York Region's Water Use and Wastewater Quality Consultation and Capacity Buyback Incentive Program has already resulted in a 32 per cent reduction in their total water consumption since 2014.

By implementing a suite of water saving measures — from replacing spray nozzles with more efficient models to reusing process water — Arla Foods has been able to reduce its annual water consumption by more than 37,000 cubic metres, which equates to a savings of \$143,000. Arla Foods also received a water savings incentive of \$19,487 from The Regional Municipality of York and has had additional savings of over \$142,000 annually from a reduction in natural gas, cleaning chemical and labour costs.

**WATER SAVING:**  
**>37,000 m<sup>3</sup>/year**

**TOTAL OPERATIONAL SAVINGS: \$285,000**

**Payback: Less than 6 months**

\*Payback period includes water incentives, energy and operational savings.



**Top:** Before — Demoulder running when no production.

**Bottom:** After — Addition of the demoulder water recovery system to reuse more water for bocconcini production.

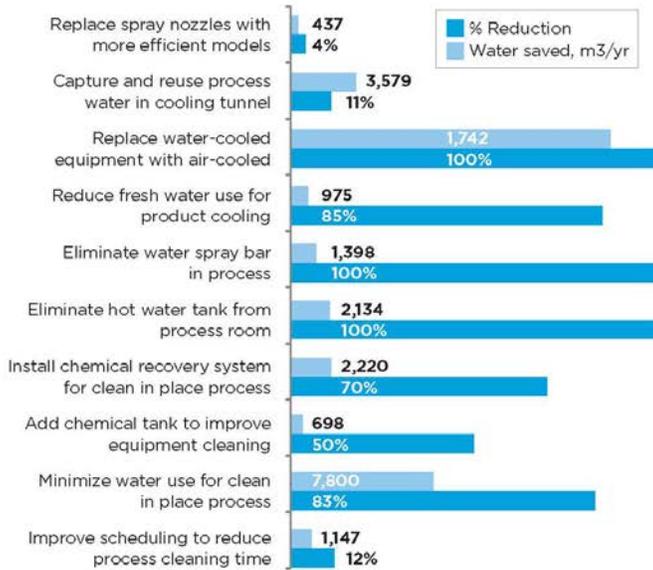
For more information on how your business can benefit from water savings, contact [waterfortomorrow@york.ca](mailto:waterfortomorrow@york.ca) or visit [york.ca/waterincentives](http://york.ca/waterincentives)





From left to right: Alicia Wind, Enviro-Stewards, Kirk Pollitt, Arla Foods, Samir Patel, Arla Foods, Omar El Sherif, Arla Foods, Bill Chihata, York Region, Ashley McKenzie, Arla Foods, Greg Sanford, Arla Foods

**Water reduction from implemented water saving opportunities**



**Environmental Strategy**

A core component of Arla's success has been their relentless dedication to sustainable growth. The company is committed to reducing their energy and water consumption by three per cent per year within their operations.

**Arla's Commitment**

**“We strive for the best environmental practices and work to continuously reduce our environmental impact, all the way from the farm to the consumer.”**

For more information on how your business can benefit from water savings, contact [waterfortomorrow@york.ca](mailto:waterfortomorrow@york.ca) or visit [york.ca/waterincentives](http://york.ca/waterincentives)



## Appendix D: MPAC Property Codes Description

Property Code	MPAC Property Codes Description	Category	Sub Category
-1	Undefined	Other	Undefined
100	Vacant residential land not on water	Residential	Others
101	Second tier vacant lot - refers to location not being directly on the water but one row back from the water	Other	Others
102	Conservation Authority Land	Other	Others
103	Municipal park (excludes Provincial parks, Federal parks, campgrounds)	ICI	Others
105	Vacant commercial land	ICI	Others
106	Vacant industrial land	ICI	Others
107	Provincial park	Other	Others
108	Federal park	Other	Others
109	Large land holdings, greater than 1000 acres	Other	Others
110	Vacant residential/recreational land on water	Residential	Other
111	Island under single ownership	Other	Other
112	Multi-residential vacant land	Residential	Multi-Units
113	Condominium development land - residential (vacant lot)	Residential	Multi-Units
114	Condominium development land - non-residential (vacant lot)	ICI	Others
115	Property in process of redevelopment utilizing existing structure(s)	Other	Others
120	Water lot (entirely under water)	Other	Others
125	Residential development land	Residential	Other
127	Townhouse block - freehold units	Residential	Multi-Units
130	Non-buildable land (walkways, buffer/berm, storm water management pond, etc.)	Other	Others
134	Land designated and zoned for open space	Other	Others
140	Common land	Other	Others
150	Mining lands - patented	Other	Others
151	Mining lands - unpatented	Other	Others
155	Land associated with power dam	Other	Others
169	Vacant land condominium (residential)	Residential	Multi-Units
200	Farm property without any buildings/structures	ICI	Others
201	Farm with residence - with or without secondary structures; no farm outbuildings	ICI	Others
210	Farm without residence - with secondary structures; with farm outbuildings	ICI	Others
211	Farm with residence - with or without secondary structures; with farm outbuildings	ICI	Others
220	Farm without residence - with commercial/industrial operation	ICI	Others
221	Farm with residence - with commercial/industrial operation	ICI	Others

Property Code	MPAC Property Codes Description	Category	Sub Category
222	Farm with a winery	ICI	Others
223	Grain/seed and feed operation	ICI	Others
224	Tobacco farm	ICI	Others
225	Ginseng farm	ICI	Others
226	Exotic farms i.e. emu, ostrich, pheasant, bison, elk, deer	ICI	Others
227	Nut Orchard	ICI	Others
228	Farm with gravel pit	ICI	Others
229	Farm with campground/mobile home park	ICI	Others
230	Intensive farm operation - without residence	ICI	Others
231	Intensive farm operation - with residence	ICI	Others
232	Large scale greenhouse operation	ICI	Others
233	Large scale swine operation	ICI	Others
234	Large scale poultry operation	ICI	Others
235	Government - agriculture research facility - predominately farm property	ICI	Others
236	Farm with oil/gas well(s)	ICI	Others
240	Managed forest property, vacant land not on water	Other	Others
241	Managed forest property, vacant land on water	Other	Others
242	Managed forest property, seasonal residence not on water	Other	Others
243	Managed forest property, seasonal residence on water	Other	Others
244	Managed forest property, residence not on water	Other	Others
245	Managed forest property, residence on water	Other	Others
260	Vacant residential/commercial/industrial land, owned by a non-farmer with a portion being farmed	ICI	Others
261	Land owned by a non-farmer improved with a non-farm residence with a portion being farmed	ICI	Others
262	Land owned by a farmer improved with a non-farm residence with a portion being farmed	ICI	Others
301	Single-family detached (not on water)	Residential	Single-Family
302	More than one structure used for residential purposes with at least one of the structures occupied permanently	Residential	Multi-Units
303	Residence with a commercial unit	ICI	Others
304	Residence with a commercial/industrial use building	ICI	Others
305	Link home	Residential	Single-Family
306	Boathouse with residence above	Residential	Others
307	Community lifestyle (not a mobile home park) - Typically, a gated community. The site is typically under single ownership. Typically, people own the structure.	Residential	Multi-Units
309	Freehold Townhouse/Row house	Residential	Multi-Units

Property Code	MPAC Property Codes Description	Category	Sub Category
311	Semi-detached residential	Residential	Single-Family
313	Single-family detached on water	Residential	Single-Family
314	Clergy residence	Residential	Others
322	Semi-detached with both units under one ownership	Residential	Multi-Units
332	Duplex	Residential	Multi-Units
333	Residential property with three self-contained units	Residential	Multi-Units
334	Residential property with four self-contained units	Residential	Multi-Units
335	Residential property with five self-contained units	Residential	Multi-Units
336	Residential property with six self-contained units	Residential	Multi-Units
340	Multi-residential, with seven or more self-contained units	Residential	Multi-Units
341	Multi-residential, high-rise property with seven or more self-contained residential units with small service-oriented commercial units, designed to service the residential tenants residing in the apartment building, e.g., hair salon, dry cleaner, variety store	Residential	Multi-Units
350	Row housing, with three to six units under single ownership	Residential	Multi-Units
352	Row housing, with seven or more units under single ownership	Residential	Multi-Units
360	Rooming or boarding house	Residential	Multi-Units
361	Bachelorette, typically a converted house with 7 or more self-contained units	Residential	Multi-Units
363	Housekeeping cottages - no American plan	Residential	Others
364	House-keeping cottages - less than 50% American plan - typically a mini resort where you rent a cabin and package plans are available. Activities, meals, etc. maybe included.	Other	Others
365	Group Home as defined in the Municipal Act 2001	ICI	Others
366	Student housing (off campus) - residential property licensed for rental by students.	Residential	Multi-Units
368	Residential Dockominium - owners receive a deed and title to the boat slip. Ownership is in fee simple title and includes submerged land and air rights associated with the slip. Similar to condominium properties, all common elements are detailed in the declaration.	Residential	Others
369	Vacant land condominium (residential - improved)	Residential	Multi-Units
370	Residential condominium	Residential	Multi-Units
371	Life Lease - No Redemption. Property where occupants have either no or limited redemption amounts. Typically Zero Balance or Declining Balance Life Lease Types.	Residential	Others
372	Life Lease - Return on Invest (guarantee return or market value based return on investment)	Residential	Others

Property Code	MPAC Property Codes Description	Category	Sub Category
373	Cooperative housing - equity - Equity Co-op corporations are owned by shareholders. The owners of shares do not receive title to a unit in the building, but acquire the exclusive use of a unit and are able to participate in the building's management.	Residential	Multi-Units
374	Cooperative housing - non-equity	Residential	Multi-Units
375	Co-ownership - percentage interest/share in the co-operative housing.	Residential	Multi-Units
376	Condominium locker unit - separately deeded.	Residential	Multi-Units
377	Condominium parking space unit	Residential	Multi-Units
378	Residential Leasehold Condominium Corporation - single ownership of the development where the units are leased.	Residential	Multi-Units
379	Residential phased Condominium Corporation	Residential	Multi-Units
380	Residential common elements Condominium Corporation	Residential	Multi-Units
381	Mobile home - one or more mobile home on a parcel of land, which is not a mobile home park operation.	Residential	Others
382	Mobile home park	Residential	Others
383	Bed and Breakfast establishment	ICI	Others
385	Time-share, fee simple	Other	Others
386	Time share, right-to-use	Other	Others
391	Seasonal/recreational dwelling - first tier on water	Residential	Others
392	Seasonal/recreational dwelling - second tier on water	Residential	Others
395	Seasonal/recreational dwelling - not located on water	Residential	Others
400	Small office building, generally single tenant or owner-occupied under 7,500 square feet	ICI	COM
401	Small medical/dental building, generally single tenant or owner-occupied under 7,500 square feet	ICI	COM
402	Large office building, generally multi - tenanted, over 7,500 square feet	ICI	COM
403	Large medical/dental building, generally multi-tenanted over 7,500 square feet	ICI	COM
405	Office use converted from house	ICI	COM
406	Retail use converted from house	ICI	COM
407	Retail lumber yard	ICI	COM
408	Freestanding Beer Store or LCBO - not associated with power or shopping centre	ICI	COM
409	Retail - one storey, generally over 10,000 square feet	ICI	COM
410	Retail - one storey, generally under 10,000 square feet	ICI	COM
411	Restaurant - conventional	ICI	COM
412	Restaurant - fast food	ICI	COM
413	Restaurant - conventional, national chain	ICI	COM
414	Restaurant - fast food, national chain	ICI	COM

Property Code	MPAC Property Codes Description	Category	Sub Category
415	Concert hall/theatre/cinema/movie house/drive-in theatre	ICI	COM
416	Concert hall/live theatre	ICI	COM
417	Entertainment complex - with a large cinema as anchor tenant	ICI	COM
419	Automotive service centre, highway - 400 series highways	ICI	COM
420	Automotive fuel station with or without service facilities	ICI	COM
421	Specialty automotive shop/auto repair/collision service/car or truck wash	ICI	COM
422	Auto dealership	ICI	COM
423	Auto dealership - independent dealer or used vehicles	ICI	COM
425	Neighbourhood shopping centre with more than two stores attached and under one ownership, with anchor - generally less than 150,000 square feet	ICI	COM
426	Small box shopping centre less than 100,000 square feet. Minimum three box stores with one anchor (large grocery or discount store)	ICI	COM
427	Big box shopping/power centre, greater than 100,000 square feet with two or more main anchors, such as discount or grocery stores, with a collection of box or strip stores and in a commercial concentration concept	ICI	COM
428	Regional shopping centre	ICI	COM
429	Community shopping centre	ICI	COM
430	Neighbourhood shopping centre with more than two stores attached and under one ownership, without anchor - generally less than 150,000 square feet	ICI	COM
431	Department store	ICI	COM
432	Banks and similar financial institutions, including credit unions - typically single tenanted, generally less than 7,500 square feet	ICI	COM
433	Banks and similar financial institutions, including credit unions - typically single tenanted, generally greater than 7,500 square feet	ICI	COM
434	Free-standing supermarket	ICI	COM
435	Large retail building centre - generally greater than 30,000 square feet	ICI	COM
436	Free-standing large retail store, national chain - generally greater than 30,000 square feet	ICI	COM
438	Neighbourhood shopping centre with offices above	ICI	COM
441	Tavern/public house/small hotel	ICI	COM
444	Full service hotel	ICI	COM
445	Limited service hotel	ICI	COM
446	Apartment hotel	ICI	COM
447	Condominium Hotel Unit	ICI	COM
450	Motel	ICI	COM

Property Code	MPAC Property Codes Description	Category	Sub Category
451	Seasonal motel	ICI	COM
460	Resort hotel	ICI	COM
461	Resort lodge	ICI	COM
462	Country inns & small inns	ICI	COM
463	Fishing/hunting lodges/resorts	ICI	COM
465	Child and community oriented camp/resort	ICI	COM
470	Multi-type complex - defined as a large multi-use complex consisting of retail/office and other uses (multi res/condominium/hotel)	ICI	COM
471	Retail or office with residential unit(s) above or behind - less than 10,000 square feet gross building area (GBA), street or onsite parking, with six or less apartments, older downtown core	ICI	COM
472	Retail or office with residential unit(s) above or behind - greater than 10,000 sq.ft. GBA, street or onsite parking, with 7 or more apartments, older downtown core	ICI	COM
473	Retail with more than one non-retail use	ICI	COM
475	Commercial condominium	ICI	COM
476	Commercial condominium (live/work)	ICI	COM
477	Retail with office(s) - less than 10,000 square feet gross building area (GBA) with offices above	ICI	COM
478	Retail with office(s) - greater than 10,000 square feet gross building area (GBA) with offices above	ICI	COM
480	Surface parking lot - excludes parking facilities that are used in conjunction with another property	ICI	COM
481	Parking garage - excludes parking facilities that are used in conjunction with another property	ICI	COM
482	Surface parking lot - used in conjunction with another property	ICI	COM
483	Parking garage - used in conjunction with another property	ICI	COM
486	Campground	ICI	COM
487	Billboard	ICI	COM
489	Driving range/golf centre - stand-alone, not part of a regulation golf course	ICI	COM
490	Golf course	ICI	COM
491	Ski resort	ICI	COM
492	Marina - located on waterfront - defined as a commercial facility for the maintenance, storage, service and/or sale of watercraft	ICI	COM
493	Marina - not located on waterfront - defined as a commercial facility for the maintenance, storage, service and/or sale of watercraft	ICI	COM
495	Communication towers - with or without secondary communication structures	ICI	COM

Property Code	MPAC Property Codes Description	Category	Sub Category
496	Communication buildings	ICI	COM
500	Mines - active	ICI	IND
501	Mines - inactive, including properties where closure plans invoked	ICI	IND
502	Mine tailings site associated with an active mine	ICI	IND
503	Mine tailings site not associated with an active mine	ICI	IND
504	Oil/gas wells	ICI	IND
505	Sawmill/lumber mill	ICI	IND
506	Forest products - including value added plywood/veneer plants	ICI	IND
510	Heavy manufacturing (non-automotive)	ICI	IND
511	Pulp and paper mill	ICI	IND
512	Cement/asphalt manufacturing plant	ICI	IND
513	Steel mill	ICI	IND
514	Automotive assembly plant	ICI	IND
515	Shipyards/dry-dock	ICI	IND
516	Automotive parts production plant	ICI	IND
517	Specialty steel production (mini-mills)	ICI	IND
518	Smelter/ore processing	ICI	IND
519	Foundry	ICI	IND
520	Standard industrial properties not specifically identified by other Industrial Property Codes	ICI	IND
521	Distillery/brewery	ICI	IND
522	Grain elevators - Great Lakes waterway	ICI	IND
523	Grain handling - Primary elevators (including feed mills)	ICI	IND
525	Process elevators - flour mills, oilseed crushing, malt houses	ICI	IND
527	Abattoir/slaughter house/rendering plants	ICI	IND
528	Food processing plant	ICI	IND
529	Freezer plant/cold storage	ICI	IND
530	Warehousing	ICI	IND
531	Mini-warehousing	ICI	IND
532	Dry Cleaning Plant	ICI	IND
535	Research and development facilities	ICI	IND
540	Other industrial (all other types not specifically defined)	ICI	IND
541	Printing plant	ICI	IND
544	Truck terminal	ICI	IND
545	Major distribution centre	ICI	IND
550	Petro-chemical plant	ICI	IND
551	Oil refinery	ICI	IND
552	Tank farm	ICI	IND
553	Bulk oil/fuel distribution terminal	ICI	IND

Property Code	MPAC Property Codes Description	Category	Sub Category
555	O.P.G. Hydraulic Generating Station	ICI	IND
556	O.P.G. Nuclear Generating Station	ICI	IND
557	O.P.G. Fossil Generating Station	ICI	IND
558	Hydro One Transformer Station	ICI	IND
559	MEU Generating Station	ICI	IND
560	MEU Transformer Station	ICI	IND
561	Hydro One Right-of-Way	ICI	IND
562	Private Hydro Rights-of-Way	ICI	IND
563	Private Hydraulic Generating Station	ICI	IND
564	Private Nuclear Generating Station	ICI	IND
565	Private Generating Station (Fossil Fuels and Cogen)	ICI	IND
566	Private Transformer Station	ICI	IND
567	Wind Turbine	ICI	IND
575	Industrial condominium	ICI	IND
580	Industrial mall	ICI	IND
588	Pipelines - transmission, distribution, field & gathering and all other types including distribution connections	ICI	IND
589	Compressor station - structures and turbines used in connection with transportation and distribution of gas	ICI	IND
590	Water treatment/filtration/water towers/pumping station	ICI	IND
591	Sewage treatment/waste pumping/waste disposal	ICI	IND
592	Dump/transfer station/incineration plant/landfill	ICI	IND
593	Gravel pit, quarry, sand pit	ICI	IND
594	Peat moss operation	ICI	IND
595	Heat or steam plant	ICI	IND
596	Recycling facility	ICI	IND
597	Railway right-of-way	ICI	IND
598	Railway buildings and lands described as assessable in the Assessment Act	ICI	IND
599	GO transit station/rail yard	ICI	IND
601	Post-secondary education - university, community college, etc.	ICI	INST
602	Multiple occupancy educational institutional residence located on or off campus	ICI	INST
605	School (elementary or secondary, including private)	ICI	INST
608	Day care	ICI	INST
610	Other educational institution (e.g. schools for the blind, deaf, special education, training)	ICI	INST
611	Other institutional residence (e.g. convents)	ICI	INST
621	Hospital, private or public	ICI	INST
623	Continuum of care seniors facility	ICI	INST

Property Code	MPAC Property Codes Description	Category	Sub Category
624	Retirement /nursing home (combined)	ICI	INST
625	Nursing home	ICI	INST
626	Old age/retirement home	ICI	INST
627	Other health care facility	ICI	INST
630	Federal penitentiary or correctional facility	ICI	INST
631	Provincial correctional facility	ICI	INST
632	Other correctional facility	ICI	INST
700	Place of worship - with a clergy residence	ICI	Others
701	Place of worship - without a clergy residence	ICI	Others
702	Cemetery	ICI	Others
703	Cemetery with non-internment services	ICI	Others
704	Crematorium	ICI	Others
705	Funeral Home	ICI	COM
710	Recreational sport club - non-commercial (excludes golf clubs and ski resorts)	ICI	Others
711	Bowling alley	ICI	COM
713	Casino	ICI	Others
715	Racetrack - auto	ICI	Others
716	Racetrack - horse, with slot facility	ICI	Others
717	Racetrack - horse, without slot facility	ICI	Others
718	Exhibition grounds/fair grounds	ICI	Others
720	Commercial sport complex	ICI	Others
721	Non-commercial sport complex	ICI	Others
722	Professional sports complex	ICI	Others
725	Amusement park	ICI	COM
726	Amusement park - large/regional	ICI	Others
730	Museum and/or art gallery	ICI	Others
731	Library and/or literary institutions	ICI	Others
733	Convention, conference, congress centre	ICI	Others
734	Banquet Hall	ICI	COM
735	Assembly hall, community hall	ICI	Others
736	Clubs - private, fraternal	ICI	Others
737	Federal airport	ICI	Others
738	Provincial airport	ICI	Others
739	Local government airport	ICI	Others
740	Airport leasehold	ICI	Others
741	Airport Authority	ICI	Others
742	Public transportation - easements and rights	ICI	Others
743	International bridge/tunnel	ICI	Others
744	Private airport/hangar	ICI	Others

Property Code	MPAC Property Codes Description	Category	Sub Category
745	Recreational airport	ICI	Others
746	Subway station	ICI	Others
748	Transit garage	ICI	Others
749	Public transportation - other	ICI	Others
750	Scientific, pharmaceutical, medical research facility (structures predominantly other than office)	ICI	Others
755	Lighthouses	ICI	Others
760	Military base or camp (CFB)	ICI	Others
761	Armoury	ICI	Others
762	Military education facility	ICI	Others
805	Post Office	ICI	Others
806	Postal mechanical sorting facility	ICI	Others
810	Fire Hall	ICI	Others
812	Base	ICI	Others
815	Police Station	ICI	Others
822	Government - agricultural research facility - predominantly non-farm property (office building, laboratories)	ICI	Others
824	Government - wharves and harbours	ICI	Others
826	Government - special educational facility	ICI	Others
828	Government - canals and locks	ICI	Others
830	Government - navigational facilities	ICI	Others
832	Government - historic site or monument	ICI	Others
840	Port authority - port activities	ICI	Others
842	Port authority - other activities	ICI	Others

## Appendix E: Fusion Gardening® Sample Marketing Material

(a) Fusion Gardening® /WSIP Postcard

leadingedge

**fusiongardening®**

CULTIVATE TRANQUILITY

Express yourself and beautify your property to create your ideal oasis. Fusion gardening® uses the latest gardening trends and a lavish blend of colours and textures, combined with your unique style.

Learn how #fusiongardening can create the enticing landscape you've been dreaming of.

[fusiongardening.ca](http://fusiongardening.ca)

**HAVE AN EDGE**

One of the first steps to a fusion garden is determining the right amount of water needed for your landscape.

Certified Water Smart Irrigation Professionals (WSIP) are leaders in the irrigation industry that can help you increase curb appeal and provide a customized watering schedule.

Book a personalized consultation with a certified Water Smart Irrigation Professional today to keep your landscape beautiful and healthy.

**Find out more.**  
Visit [york.ca/irrigation](http://york.ca/irrigation) or call 1-888-967-5426.

HORTICULTURAL TRADES ASSOCIATION  
**landscapeontario.com**  
Green for Life!

f t in

**York Region**

(b) Fusion Gardening® City Life Magazine Advertisement Samples

August 2017



**stunningly bold**

**fusiongardening®**  
CULTIVATE TRANQUILITY

Want to try something bold in your garden? Visit a Fusion Gardening® expert to learn about the trends and how #fusiongardening can help you create your own stunning retreat.

Fusion Gardening® experts in your area:  
Meadow Valley Garden & Gift Centre | Piques & Valleys | Terracotta Home & Garden

One of the first steps to a fusion garden is determining the right amount of water needed for your property. Book a personalized consultation with a certified Water Smart Irrigation Professional to keep your landscape beautiful and healthy.

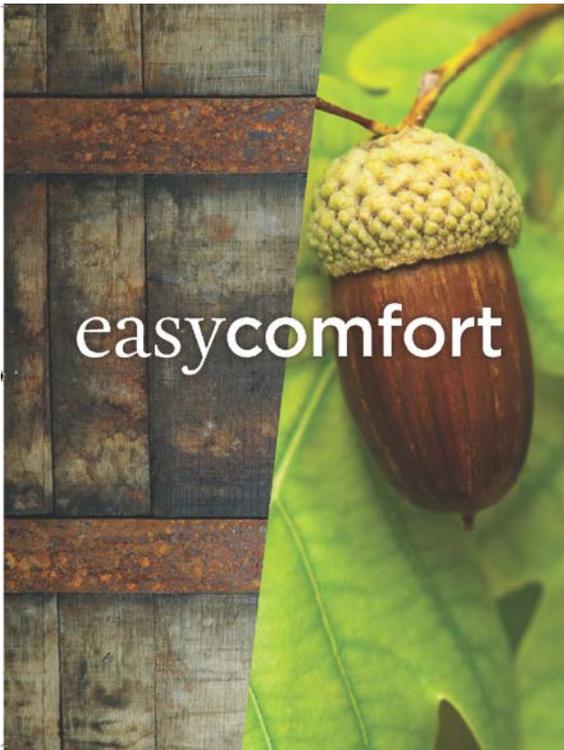
To find a Fusion Gardening® expert or Water Smart Irrigation Professional, visit [fusiongardening.ca](http://fusiongardening.ca) or call 1-888-967-5426.

[fusiongardening.ca](http://fusiongardening.ca)  
CULTIVATE TRANQUILITY

Facebook, Twitter, Instagram, Pinterest icons

**York Region**

October 2017



**easycomfort**

**fusiongardening®**  
CULTIVATE TRANQUILITY

Ready to add some fall hues in your garden? Fusion Gardening® is a style of landscaping that works in harmony with the natural conditions of your property. Traditional and modern elements blend to create beautiful outdoor spaces while reducing maintenance and watering needs. Visit a Fusion Gardening® expert to learn how #fusiongardening can help you create your own comfortable retreat.

Fusion Gardening® experts in your area:  
Meadow Valley Garden & Gift Centre | Piques & Valleys | Terracotta Home & Garden

Fall is a great time to plan for next spring and ensure your irrigation system is in good working condition. Book a personalized consultation with a certified Water Smart Irrigation Professional to keep your landscape beautiful and healthy.

To find a Fusion Gardening® expert or Water Smart Irrigation Professional, visit [fusiongardening.ca](http://fusiongardening.ca) or call 1-888-967-5426.

[fusiongardening.ca](http://fusiongardening.ca)  
CULTIVATE TRANQUILITY

Facebook, Twitter, Instagram, Pinterest icons

**York Region**

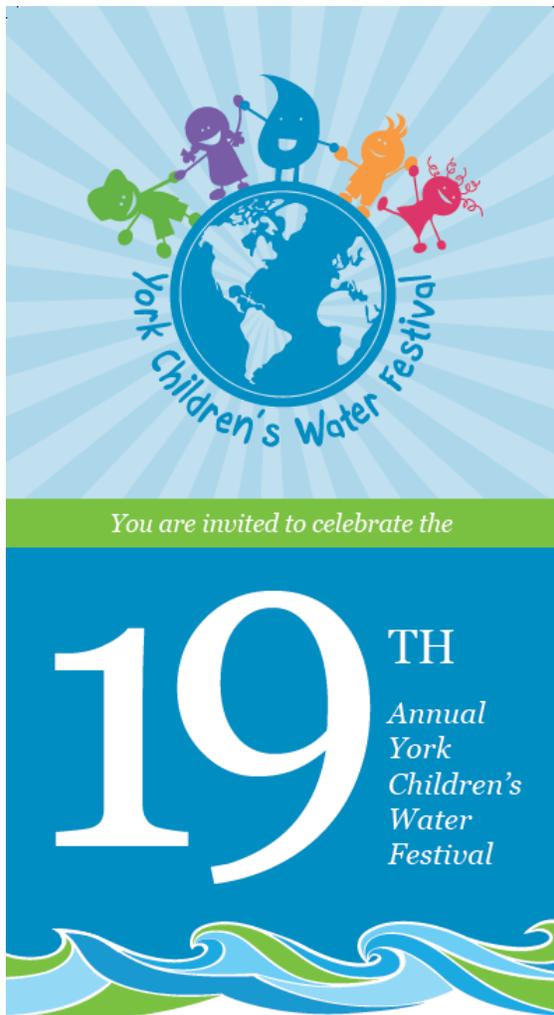
(c) Fusion Gardening® Alternative Plant Guide  
Cover and sample of pages



(d) Fusion Gardening® Educational Cards  
Set of 10 cards, examples below



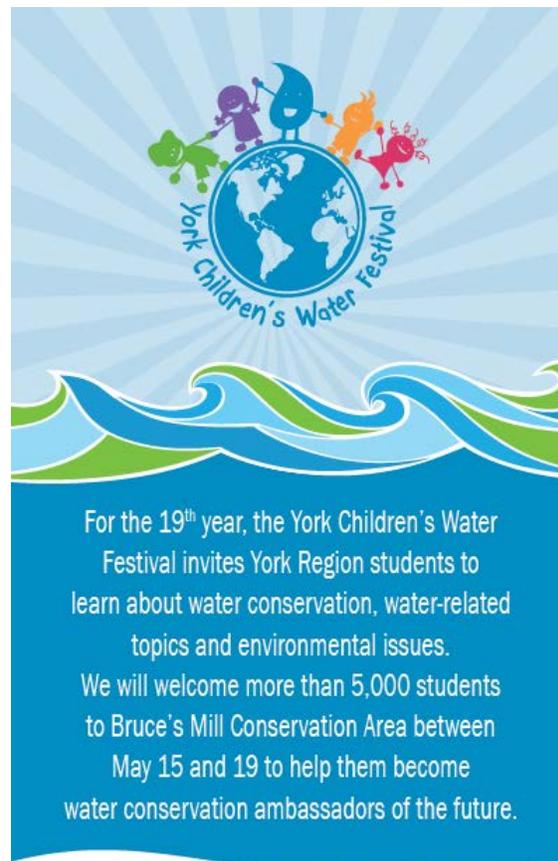
## Appendix F: York Region Children's Water Festival Invitation Poster



### Opening Ceremonies

**Tuesday, May 16, 2017 at 10:30 a.m.**

**Bruce's Mill Conservation Area**  
3291 Stouffville Road, Town of Whitchurch-Stouffville



**RSVP by Friday, May 5, 2017**

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