



**GREAT LAKES AND ST. LAWRENCE CITIES INITIATIVE**  
**ALLIANCE DES VILLES DES GRANDS LACS ET DU SAINT-LAURENT**

**RESOLUTION 06 – 2017M**

**ACTION ON PHARMACEUTICALS AND PERSONAL CARE PRODUCTS**  
**(PPCP) POLLUTION IN THE GREAT LAKES AND ST. LAWRENCE**

**Submitted by: City of Mississauga**

**WHEREAS**, Pharmaceuticals and Personal Care Products (PPCPs) including prescription drugs, over the counter drugs, veterinary drugs, nutritional supplements, vitamins, cosmetics, lotions and sunscreens, fragrances, insect repellents and common chemicals such as household cleaners have a direct adverse impact on the Great Lakes and St. Lawrence aquatic ecosystem, drinking water and water quality ; and

**WHEREAS**, PPCPs can affect development, metabolism, spawning and behavior of aquatic organisms; and

**WHEREAS**, more than 48 million people in the U.S. and Canada get their drinking water from the Great Lakes and St. Lawrence River system; and

**WHEREAS**, “treated wastewaters in the United States contain detectable quantities of surfactants, antibiotics, and other types of antimicrobial chemicals contained in pharmaceutical and personal-care products (PPCPs) that are released into stream ecosystems.” (Wilson et al. 2003); and

**WHEREAS**, the chemical compounds of pharmaceuticals and personal care products are not currently regulated in Ontario or Quebec drinking water nor are there USEPA water quality/criteria or standards for the majority of these chemicals; and

**WHEREAS**, the ability to remove PPCPs from wastewater treatment plants is dependent on the chemical under investigation; and

**WHEREAS**, “it is unclear which treatments are most effective and whether compounds are destroyed or transformed to degradation products” (Ministry of the Environment, 2007); and



**WHEREAS**, Contaminants of Emerging Concern (CECs), which include PPCPs, have been identified as a “key public health concern in the Lake Simcoe Protection Plan” (Metcalf 2014); and

**WHEREAS**, Environment Canada and Health Canada hosted workshops identifying research and risk management needs in regards to PPCPs but focused strongly on the risk to human health with little known on aquatic organisms (Kleywegt et al. 2007); and

**WHEREAS**, endocrine-disrupting compounds (EDCs), a type of PPCP, cause feminization of male fish in the outfalls of wastewater treatment plants (see Hicks et al. 2017); and

**WHEREAS**, upgrades to a wastewater treatment plant in Kitchener, Ontario, Canada (along the Grand River) reduced feminization of male fish (specifically Rainbow Darters) to less than 10% in post-upgrade years (compared to 70-100% pre-upgrade) (see Hicks et al. 2017); and

**WHEREAS**, according to research in Lake Michigan, PPCPs can be found as far as 3.2km (1.98 miles) offshore of wastewater treatment plants (Blair et al. 2013). This is an issue because water intakes of water treatment plants can be less than 2km (1.24 miles) offshore; and

**WHEREAS**, Blair et al. (2013) suggested that “the environmental risk of PPCPs in large lake systems, such as the Great Lakes, has been questioned due to high dilution; however, the concentrations found in this study, and their corresponding risk quotient, indicate a significant threat by PPCPs to the health of the Great Lakes, particularly near shore organisms”; and

**WHEREAS**, work continues, although progress is slow, to ensure proper and safe disposal options for unused pharmaceuticals are available to consumers, particularly in the U.S.

**NOW, THEREFORE, BE IT RESOLVED**, that the Great Lakes and St. Lawrence Cities Initiative encourages research to identify PPCPs of concern and the methodologies to determine their concentrations in the wastewater effluent before it is released to the receiving waters.

**BE IT FURTHER RESOLVED**, that that the Cities Initiative calls for research to be conducted on the levels and frequency of PPCPs and EDCs and the ecological effects of



mixtures of PPCPs in regards to the complexities of aquatic and terrestrial environments;  
and

**BE IT FURTHER RESOLVED**, that the Cities Initiative echoes the Ontario Ministry of Environment's call for further work "... to better understand the effectiveness of individual treatment technologies in reducing parent compounds as well as their metabolites or degradation products" (Ministry of the Environment, 2007); and

**BE IT FURTHER RESOLVED**, that the Cities Initiative calls for research on the long term effects of PPCPs on aquatic species population levels, with emphasis on large lake systems, and effects on terrestrial ecosystems; and

**BE IT FURTHER RESOLVED**, that the Cities Initiatives calls for research on effective methods of removing PPCPs from wastewater; and

**BE IT FURTHER RESOLVED**, It is recommended that the federal, provincial and state governments move towards regulating PPCPs in wastewater effluent (Blair et al. 2013), accompanied with funding, and Wastewater Treatment Plants (WWTPs) be upgraded through designated federal, provincial, and state funding to combat PPCPs intentionally disposed into the wastewater system as well as PPCPs excreted from humans; and

**BE IT FURTHER RESOLVED**, that the Cities Initiative encourages the proper and safe disposal of unused PPCPs and calls on pharmaceutical and personal care product manufacturers to take responsibility for their products and provide consumers with disposal options; and

**BE IT FINALLY RESOLVED**, that the Federal Governments of Canada and the United States devote the necessary financial and other resources to address the threat of PPCPS in our drinking water and water systems.

Signed this 14<sup>th</sup> day of June 2017

Denis Coderre, Chair  
Great Lakes and St. Lawrence Cities Initiative  
Mayor, City of Montréal