

Submission to the City of Calgary IPM Review

Avoiding Pesticide Health Risks in Calgary

December 19, 2018

1. Who is the Canadian Association of Physicians for the Environment, and what is your interest in the City of Calgary's review of its Integrated Pest Management (IPM) plan?

Founded in 1993, the Canadian Association of Physicians for the Environment (CAPE) is a national non-profit organization directed by doctors who are committed to bettering human health by protecting the environment. CAPE advances healthy public policies related to pesticides, active transportation, climate change and air pollution, among other issues. CAPE is an affiliated member of the Canadian Medical Association.

From its inception, the Association has worked to reduce human exposure to pesticides as a public health goal. We supported municipal and provincial legislation restricting the non-essential uses of toxic pesticides in Ontario, New Brunswick, Newfoundland and Labrador, and Manitoba. In 2016, CAPE published a policy report¹ outlining municipal and provincial restrictions on non-essential uses of pesticides across Canada. This was followed in 2018 by a case study report² that examined how a number of Canadian municipalities are successfully delivering weed control programs under bans on the non-essential uses of toxic pesticides. CAPE has also commissioned public opinion research on pesticides in Manitoba, Alberta, and Newfoundland and Labrador.

In June 2017, we filed a submission³ with the City of Calgary's Standing Committee on Community and Protective Services in response to the City's Pesticide Toxicity Report (CPS2017-05-10).⁴ When the issue of pesticide toxicity subsequently reached Calgary City Council, CAPE provided an overview letter⁵ to members of Council underscoring the reasons why we believe the City should reduce its use of toxic pesticides. Councillors directed that a review of Calgary's IPM program be carried out, and that health groups such as CAPE be consulted during the course of the review. We welcome the opportunity to assist the City in this matter.

2. From the perspective of a health organization, what are your general comments on Calgary's IPM plan?

The City's current IPM plan,⁶ now some 20 years old, includes references to protecting human health and the environment, implementing horticultural practices to enhance soil and turf, reducing pesticide use, choosing least toxic products, educating the public, and reporting regularly on pesticide use to ensure accountability, among other topics. We are pleased to see references to human health explicitly included. For example, the plan acknowledges citizens' concerns about pesticide use and its "associated

health and environmental impacts” (p. 2). A policy statement affirms the City’s commitment to “manage vegetation and pests using IPM principles that ... minimize the risk to human health and the environment ... [and] ... minimize the use of pesticides” (p. 29). Goals for the City’s corporate use of pesticides include an intent to “ensure that any pesticide use minimizes adverse impacts on human health or the environment” (p. 35). Further, where it is decided that pesticides will be used, “preference [is to be] given to low toxicity and highly selective products” (p. 59).

These commendable statements represent an acknowledgement in policy that the human health impacts of pesticides ought to be a significant factor in decisions around pesticide use. In implementation and in practice, however, it appears that toxic pesticides are far from a last resort in Calgary. Indeed, a number of pesticides used for weed control by the City are banned for that purpose in other Canadian jurisdictions: for example, 2,4-D, mecoprop, dicamba and glyphosate.

Typical IPM approaches claim to follow a “least toxic” hierarchy in pest management choices. But the City’s pesticide use report for 2016⁷ reveals that 31 of 35 pesticides used by the City (including all 15 of the herbicides) were in the second-highest risk category, as set out in Alberta regulations. The pesticide use report for 2017⁸ follows a similar pattern.

CAPE’s observation is that IPM policies allowing for the use of the more toxic pesticides too often simply serve to normalize their use. It is not surprising, then, to see wide, permissive conditions for pesticide use spelled out under a section on Maintenance Standards in Calgary’s IPM Plan:

However, where standards are high and tolerance for pest damage is low (e.g. areas with aesthetic importance, functional purpose, historical value, or extensive public investment), it may be difficult to avoid chemical use: applying alternative management strategies and practices may not work; fiscal resources may inhibit intensive application of effective non-chemical methods; maintenance personnel may feel compelled to use pesticides to meet expected levels of quality or protect the integrity of the site or feature (p. 33).

CAPE notes that dozens of cities across Canada, operating under restrictions on non-essential uses of pesticides, are able to maintain priority green spaces in well-groomed, attractive and functional condition within available budgets without using the banned products.

In short, as Calgary’s IPM experience suggests, as long as toxic pesticides remain within reach, they will be used. Clearly, stronger safeguards are needed to regulate pest management decisions in Calgary, so as to reduce health-harming risks to citizens of all ages who use public parks, sports fields and other green spaces.

3. What is the main concern you want to bring to the attention of the IPM review?

CAPE’s primary focus here is on protecting Calgary residents from the health risks associated with exposure to toxic pesticides that are used within the City of Calgary. The 2016 motion of City Council that led to the above-noted City pesticide toxicity report signals a concern on the part of Councillors with regard to pesticide risks. CAPE is not satisfied that the administrative response to this motion (then or since) has given sufficient consideration to these concerns.

As an organization concerned with environmental impacts on human health, CAPE wishes to highlight the pesticide health risks that are reported in a number of published systematic reviews of

epidemiological studies. Epidemiology can be understood as the branch of medicine that investigates the prevalence and distribution of diseases in selected populations. We provide references to four systematic reviews^{9 10 11 12} which, taken together, include more than 500 pesticide health studies.

This substantial body of research tells us that children are most at risk from exposure to pesticides. The dangers of exposure for children include increased risks of low birth weight and pre-term births in babies, deficits in cognitive and motor development, hormonal (endocrine) disruption, learning disabilities and other developmental deficits, birth defects such as cleft palate, and childhood cancers such as leukemia and brain cancer. Children's elevated risks reflect several factors: their relatively large body surface-area-to-weight ratio; their vulnerability during early stages of physical development and during periods of rapid growth; their long life expectancy (for problems to develop); the fact that they often play close to the ground on grass on residential lawns, in parks, at schools and on playgrounds; and their typical hand-to-mouth behavior (i.e., putting their hands and objects in their mouths on a frequent basis). In many studies, the harmful effects noted in children were related to the exposure of their mothers during pregnancy or to children's exposure at a young age.

Human exposure to pesticides can occur through direct contact with skin (dermal absorption), through food and water (oral ingestion), or from breathing (inhalation). Exposure to a given pesticide may occur simultaneously through more than a single pathway. As well, people are typically exposed to other toxic substances (including other pesticides) at the same time. For some harms affecting children especially, there are critical windows of vulnerability — i.e. pre-conception, prenatal, or during infancy or childhood. During these vulnerable periods, even single, low-dose exposures may cause harm that may not occur at a later stage of development.

In adults, the range of range of harmful effects associated with exposure to pesticides includes increased risk for Parkinson's disease, asthma and obstructive lung disease, Amyotrophic Lateral Sclerosis (ALS), diabetes, and cancers such as non-Hodgkin lymphoma, leukemia and cutaneous melanoma, among other risks.

We note that when non-essential lawn and garden pesticides are the source of such exposures, these are preventable harms.

4. What would CAPE like to see the City of Calgary do in light of these health concerns, and why?

As Calgary's experience demonstrates, IPM on its own is clearly insufficient as a policy instrument to limit public health risks associated with pest control. CAPE recommends that **the City of Calgary, as a corporate entity, should eliminate its own routine use of toxic pesticides in City-managed parks and green spaces.** This step is needed, at minimum, to reduce the public health risks resulting from the City's own current pest control practices.

We understand that the IPM policy review now under way is focused on the City's corporate use of pesticides. However, we note references in City reports to the use of pesticides in the broader community when, for example, comparisons are made between City and residential pesticide use.¹³ As well, there is explicit acknowledgement of citizens' concerns about pesticides in the IPM Plan itself.¹⁴ From a health perspective, a review of IPM in Calgary, together with the evidence of high levels of residential pesticide use across the City, highlights the need to reduce human exposure to pesticides used by the City itself and by others. CAPE recommends that implementing restrictions on non-essential uses of pesticides should be an important public health goal of Calgary City Council.

Accordingly, **CAPE urges the City of Calgary to enact a bylaw restricting non-essential uses of toxic pesticides on residential and privately owned lawns and gardens as well as in City-managed green spaces**, drawing on successful pest control bylaws and regulations in other jurisdictions (e.g., Ontario, Manitoba, Vancouver, and many others). CAPE's recent study of municipal weed control found that such policies work well and are readily accepted by the community. At present, Alberta is one of only two provinces that do not have a provincial law or multiple municipal bylaws restricting the use of toxic pesticides for non-essential purposes.

CAPE notes that a 2016 public opinion poll,¹⁵ conducted in Alberta for CAPE and Prevent Cancer Now, found that two-thirds of respondents were concerned that pesticides pose a threat to the health of children, and over 60 per cent supported a law to phase out the sale and use of toxic pesticides on lawns and gardens. Understandably, people want to live in healthy communities where they and their children are not exposed to avoidable pesticide health risks. More than 80 per cent of Canadians live in communities where restrictions on toxic pesticides are in effect.

Childhood exposure to pesticides is an especially relevant concern in Calgary, where the population is younger than that of most Canadian cities. Statistics Canada¹⁶ reports that 18.8 per cent of Calgary's residents in 2016 were age 14 or younger, the third-highest percentage among Canadian cities. As noted above, young people in this age cohort are in active stages of physical development and are among the most vulnerable members of the community when it comes to health risks associated with pesticides. Calgary, which is the largest city in Canada without restrictions on non-essential uses of pesticides, should be protecting its young residents from avoidable health risks.

5. The City of Calgary states that it uses only pest control products that have been approved by Health Canada's Pest Management Regulatory Agency (PMRA). Why does CAPE believe that PMRA approval is not a sufficient assurance of pesticide safety?

There are simply too many troubling gaps, flaws and weaknesses in Canada's pesticide regulatory process. In evaluating pesticides, the PMRA relies on industry-supplied studies that are too often neither independent nor peer-reviewed. Frequently, there are missing pieces in the data; for example, insufficient evidence on health impacts of chronic, low-dose exposure to pesticides. The evaluation system does not take adequate account of the real-world effects of pesticides on human populations. For example, risks from pesticide exposures through multiple pathways and risks from combined exposures to several chemicals simultaneously are not well addressed in the evaluation process.

Pesticide toxicity can be greatly increased when other chemicals are added to the main active ingredient in retail product formulations. These additives may include surfactants, solvents, preservatives and other product enhancers. Formulations can be many times more toxic than the main active ingredient alone.¹⁷ However, PMRA evaluations are often carried out on just the active ingredient(s), and not on the formulated products that are actually sold and used. In such cases, the health risks associated with the use of formulated products may be seriously underestimated.

Further, although the federal Pest Control Products Act¹⁸ requires the re-evaluation of registered pesticides after 15 years, the PMRA has admitted that it is far behind in conducting such reviews. There were some 125 re-evaluations of pesticides under way as of October 2018, and a further 145 due to launch in the next five years. The Agency acknowledges that it is not sufficiently resourced to carry out these reviews in a timely way. This means that products originally approved on the basis of decades-old

studies can remain in use for extended periods of time without updated assessments of their health and environmental risks.

Troubling revelations about evidence used in the recent PMRA re-evaluation of glyphosate have arisen out of an August 2018 California court decision. Internal company documents filed in that case raise questions about the role of the Monsanto Company, the manufacturer of many widely-used glyphosate-based herbicides, in preparing or reviewing a number of studies of glyphosate. In Canada, the legal non-profit organization, Ecojustice, has found that the PMRA, in its 2017 re-evaluation decision approving glyphosate for a further 15 years, referenced some of these studies. As a result of these findings, Ecojustice, on behalf of CAPE and a number of other health and environmental groups, has asked the federal Minister of Health to order a new review of glyphosate and of the evidence used by the PMRA in its re-evaluation of this pesticide.¹⁹ Until the questions are resolved and a review is completed, the PMRA's re-approval of glyphosate remains under a cloud.

Because of gaps in data, the lack of independent peer review of industry-sponsored studies, questions about industry influence over the evidence used in evaluations, delays in the completion of pesticide re-evaluations, and other critical deficiencies (such as the failure to test product formulations, not just active ingredients), CAPE observes that the PMRA's flawed and inadequate evaluation process is not reliably health-protective.

6. What are CAPE's recommendations concerning Calgary's IPM program and the use of pesticides within the City?

- CAPE recommends that the City of Calgary should adopt a corporate policy that restricts the use of toxic pesticides in City-managed parks and green spaces. Where pest control measures are needed for the protection of public health or for compliance with noxious weed legislation, least toxic methods and materials should be used.
- To strengthen and extend the benefits of pesticide reduction as a public health goal within the City of Calgary, CAPE further recommends that Calgary City Council should enact a municipal bylaw restricting non-essential uses of toxic pesticides on lawns and gardens throughout the city. CAPE's 2016 policy report identifies a number of best practices in municipal pesticide policy, and examples of bylaws are available from other Canadian cities.

CAPE is pleased to assist the City of Calgary in its reconsideration of pesticide use. The City has an opportunity at this time to take important steps to protect residents from unnecessary exposure to harmful pesticides.

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*The Canadian Association of Physicians for the Environment (CAPE)
is the only doctor-directed national, non-profit organization in Canada dedicated to
improving human health by protecting the environment.*

Endnotes

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- ¹ Canadian Association of Physicians for the Environment (CAPE). 2016. "Cosmetic Pesticides – Provincial Policies and Municipal Bylaws: Lessons Learned and Best Practices." Prepared by Ian Arnold and Kim Perrotta. Retrieved from <https://cape.ca/wp-content/uploads/2018/04/Pesticides-Policy-Report-FINAL.pdf>
- ² Canadian Association of Physicians for the Environment (CAPE). 2018. "Municipal Weed Control: Lessons from Ground Zero." Prepared by Randall McQuaker and Kim Perrotta. Retrieved from <https://cape.ca/wp-content/uploads/2018/10/Municipal-Weed-Control-Report-October-11-2018-.pdf>
- ³ Canadian Association of Physicians for the Environment (CAPE). 2017. "Response and Recommendations Concerning Pesticide Toxicity Report CPS2017-0510." Prepared by Randall McQuaker. Retrieved from <https://cape.ca/wp-content/uploads/2018/03/3.CAPE-submission-to-Calgary-SPC-June-7-2017-as-filed.pdf>
- ⁴ City of Calgary. 2017. Pesticide Toxicity Report. Retrieved from <https://pub-calgary.escribemeetings.com/filestream.ashx?DocumentId=6923>
- ⁵ Canadian Association of Physicians for the Environment (CAPE). 2017. Letter to Mayor Naheed Nenshi and Calgary City Councillors re: Report on Pesticide Toxicity (CPS2017-0510). Retrieved from <https://cape.ca/wp-content/uploads/2018/03/4.Letter-to-Calgary-City-Council-Recommend-Reductions-in-Pesticide-Use-June-2017.pdf>
- ⁶ City of Calgary. 1998. "Integrated Pest Management Plan." Retrieved from <http://www.calgary.ca/CSPS/Parks/Documents/Planning-and-Operations/Pest-Management/integrated-pest-management-plan.pdf>
- ⁷ City of Calgary. July 2017. "2016 Pesticide Use Report."
- ⁸ City of Calgary. October 2018. "2017 Pesticide Use Report." Retrieved from <http://www.calgary.ca/CSPS/Parks/Documents/Planning-and-Operations/Pest-Management/2017PesticideUseReport.pdf>
- ⁹ Bassil K, C Vakil, M Sanborn, DC Cole, JS Kaur, KJ Kerr. 2007. "Cancer Health Effects of Pesticides – Systematic Review." Canadian Family Physician. October 2007. 53 (10). Retrieved from <http://www.cfp.ca/content/53/10/1704.full>
- ¹⁰ Chief Public Health Office, Prince Edward Island (PEI). 2015. "Pesticides and Human Health." Prepared by Carolyn Sanford, DVM, PhD, David Sabapathy, MD, MBA, MSc, PEng, FRCPC, Heather Morrison, MD, MPhil, DPhil, CCDP(EM), and Katherine Gaudreau RN, BScN, MSc. Retrieved from http://www.gov.pe.ca/photos/original/cphs_pesticipt1.pdf
- ¹¹ Ontario College of Family Physicians (OCFP). 2012. "2012 Systematic Review of Pesticide Health Effects." Prepared by Marg Sanborn, MD, CCFP, FCFP, Kate Bassil, MSc, PhD, Cathy Vakil, MD, CCFP, FCFP, Kathleen Kerr, MD, MCFP, Dip. Env. Health, and Kelsey Ragan, MPH. Retrieved from <http://ocfp.on.ca/docs/pesticides-paper/2012-systematic-review-of-pesticide.pdf>
- ¹² Sanborn M, Kerr KJ, Sanin LH, Cole DC, Bassil KL, Vakil C. 2007. "Non-cancer health effects of pesticides – Systematic review and implications for family doctors." Canadian Family Physician. October 2007. 53 (10). Retrieved from <http://www.cfp.ca/content/53/10/1712.full>
- ¹³ See Pesticide Toxicity Report (note 4 above), p. 7, Figure 1
- ¹⁴ See IPM Plan, 1998. "Need for Plan and Policy." - "Many citizens are concerned about the amount and location of pesticide application within Calgary, and its associated health and environmental impacts" (p. 2).
- ¹⁵ Canadian Association of Physicians for the Environment (CAPE) and Prevent Cancer Now. 2016. "Alberta Pesticide Survey Report." Prepared by Oraclepoll Research. Retrieved from <https://cape.ca/wp-content/uploads/2018/03/2.Alberta-Pesticide-Survey-Report-September-2016.pdf>

¹⁶ Statistics Canada. 2017. "Age and Sex Highlight Tables, 2016 Census." Retrieved from <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hltfst/as/Table.cfm?Lang=E&T=12&Type=2>

¹⁷ See, for example, Mesnage, Robin and Michael N. Antoniou. 2017. "Ignoring Adjuvant Toxicity Falsifies the Safety Profile of Commercial Pesticides." *Frontiers in Public Health*, 5 (361). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5786549/>

¹⁸ Pest Control Products Act. 2002, current to November 20, 2018. See Section 16(2). Retrieved from <https://laws-lois.justice.gc.ca/eng/acts/P-9.01/page-3.html#docCont>

¹⁹ Ecojustice. November 9, 2018. Letter to the Honourable Ginette Petitpas Taylor, Minister of Health. Retrieved from <https://cape.ca/wp-content/uploads/2018/11/2018-10-29-edited-Nov-92c-2018-Ltr-to-Minister-of-Health-re-Glyphosate-Objection.signed.pdf>