

Briefing Note

Pest Management in Cougar Ridge

Issue: To determine what method(s) should be used to control pests in Cougar Ridge.

Background:

- The Cougar Ridge Residents Association (CRRA) is responsible for maintaining two types of common areas:
 - **Shrub beds**, which can contain, flowers, shrubs and/or trees.
 - **Turf**, which The City of Calgary (The City) classifies into three categories:
 - High Profile Display – e.g., irrigated sports fields and ornamental lawns.
 - Medium Profile Display – e.g., general park areas.
 - Open green space – e.g., non-irrigated meadows, picnic areas, rough grass, and boulevards.
- These areas are important to residents as a place to play sports, play with our children, go for walks, aesthetically frame our houses and neighbourhood, contribute to property value, and encourage or discourage wildlife.
- There is a significant pest (e.g., dandelions, thistles, northern pocket gophers, etc.) problem in Cougar Ridge.
- All residents want the pest problems under control.
- However, not all residents agree on whether or not chemical controls (i.e., pesticides) should be used to address this problem. For definitions of pests and pesticides, please see Appendix A.
- There are two main options that can be used as either an alternative to or in addition to chemical controls:
 1. Cultural controls: include the application and timing of cutting, watering, aeration, fertilization, etc. to discourage pests. Pests, such as weeds, are often the result of underlying landscape issues.
 2. Design: includes the type and density of plantings that discourage pests.

Analysis:

- The CRRA has a legal obligation to control weeds. See appendix B.
- There are five parks in Calgary that are classified by The City as “pesticide-free parks”. They range in size from 820 square metres to 18,000 square metres. There is currently no community that is wholly classified by The City as “pesticide-free”. See Appendix C for the process for applying for a pesticide-free park designation.
- There are pros and cons about using and avoiding chemical control. See Appendix D.
- Naturalization is an example of how The City uses alternative design as part of its Integrated Pest Management Plan (IPM) to minimize pesticide use. **Naturalization** means re-introducing or maintaining native plants. When applied successfully, natural processes of growth and change are less restricted and the landscape is allowed to become more natural rather than ornamental.¹

¹ Currently, Calgary has 450 natural areas which make up over 46 per cent of the park space in Calgary. In total, this is 3,700 hectares of land. The City of Calgary Roads has also naturalized nearly 1% of approximately 1,000 hectares of land it manages. This includes sections along Sarcee Trail, Country Hills

- Another example of a cultural control for controlling weeds is a steam weed killer. Bow Point Nursery has quoted the CRRA about \$9,000 to provide four applications per summer.

Recommendations:

1. For the community as a whole, the CRRA should NOT adopt a pesticide-free policy at this time.
2. Apply to have the four tot lots in Cougar Ridge designated by The City as Pesticide-Free Parks. If this initiative is successful, the CRRA may consider expanding it to other green spaces in the future, up to and including the community as a whole.
3. Consider organizing neighbourhood volunteers at least one time per year to pull weeds by hand. “The Cougar Ridge Weeding Bee” could be scheduled for a Saturday morning, from 9 am to noon, and we can try to organize coffee and snacks for the volunteers. The turnout at such an event could help the CRRA determine the degree of residents’ commitment to pesticide-free green spaces.
4. Run a public awareness campaign² for the neighborhood that helps define and give examples of naturalized, pesticide-free spaces within Cougar Ridge, including the Calgary Waldorf School grounds and spotlighting individual homeowners who have chosen a pesticide-free regime for their space. Organizing a tour for homeowners within the neighborhood to learn more about and see examples of pesticide-free space and naturalized areas may sway some of the opinion in the community. The Calgary Waldorf School Grounds Committee has volunteered to host and help plan this type of event.

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Boulevard, Peigan Trail and Highway 22X.

² The CRRA or the Waldorf School Grounds Committee could also contact the Toronto Environmental Alliance (TEA) at 416-596-0660 and request a poster they produced with the Canadian Association of Physicians for the Environment (CAPE) promoting pesticide-free parks and public spaces.

Appendix A: Definitions of pests and pesticides

- Pests may be defined as organisms that include insects, weeds or other plants, bird, mammals, fish and micro-organisms that compete with humans for food, destroy property, spread disease or are considered a nuisance.
- Pesticides are usually a poison that kills the target insect, weed or other plant, bird, mammal, fish or micro-organism. Pesticides are classified according to the organism that they are used to control.
- “Pesticide” is a broad term that includes insecticides (that target insects), herbicides (that target plants – most often weeds) and fumigants (that destroy other materials by sterilizing the soil).
- A pesticide may consist of a single chemical compound, but more often, they are made up of a complex formula contained in a carrier (i.e., a solution, solvent or powder).
- Pesticides can be synthetic or organic chemicals, inorganic compounds or biological organisms.

Close-up picture of Sheep’s Fescue grass that has been mowed. It is a dark-green, fine-leaved, soft grass that grows in little bunches and spreads by seed. Once established it is soft on the feet and even. It only grows 6 - 8 inches high in the Calgary climate, so it can be left unmowed. It then lays down in swirls for a nice effect. If you mow, the mowing is required once a month at most. Once it greens up in the spring it stays green all season without watering. It grows densely and out-competes weeds. It grows well in sun and shade.



Appendix B: Regulatory context

- The *Alberta Weed Control Act*³ recognizes restricted, noxious and nuisance weeds that may displace or significantly alter native plant communities. Restricted weeds must be destroyed, noxious weeds controlled and nuisance weeds prevented from spreading.
- The City's **integrated pest management (IPM)** plan is a science-based approach that identifies, monitors and, if necessary, suppresses pests using economically and environmentally sound practices. Environmental protection and human safety are key considerations of IPM.
- The IPM establishes weed-density thresholds to define when weed growth threatens the long-term health of a landscape. Measurements are taken prior to the initiation of any pest control action. In recent years, a few residents associations (RAs) who hired private landscaping contractors have asked for, and the contractors obliged with, more pesticide applications than the IPM allows. The City intervenes in such cases.
- How much weed density on turf is tolerable depends on the following standards:
 - High Profile Display - Premium level of service. Maintain "weed free". Playability, safety, wear resistance, and changes in weed infestation level trends should be considered in determining action levels. Turf with 5-10% weed cover may be accepted by the public as "weed free"; acceptable thresholds may be 10-15% weed cover.
 - Medium Profile Display - High to Moderate level of service. Some weeds are acceptable providing public safety and/or functional use of facility is not compromised. Acceptable thresholds may be 20-30% weed cover.
 - Open green space - Moderate to low level of service. Controls should only be implemented in the interest of public safety or if noxious weeds threaten to contaminate adjoining higher classification facilities. Acceptable thresholds may be over 40% weed cover.
 - No chemical controls may be used within 30 metres of a playground site.
- In Calgary's dry arid climate, failure to take action once pest thresholds have been exceeded results in bare spots, as weeds are worn away and other groundcovers cannot take hold. Left unchecked, these areas will expand until expensive, labour-intensive rehabilitation measures are required.
- In areas where the weed density thresholds have been exceeded, The City uses spot spraying to apply pesticides approved as presenting minimal risk to human safety and the environment, when used according to the label. Broadband spraying has not been used on public property for many years in Calgary.
- According to the IPM, pesticides are not allowed to be sprayed within 30 metres of a playground.

³ This *Act* is expected to be updated in early 2010.

Appendix C: Process of applying for a Pesticide-Free Park designation

- If community members were interested in designating one or more of Cougar Ridge's parks as Pesticide-Free, the following process would apply:
 - Community members must submit a waiver, signed by two-thirds of the homeowners that physically reside next to that park (or community-at-large in the case of a request for all parks in the community) to initiate a request to conditionally prohibit pesticides.
 - Proposed site(s) will be inspected and evaluated for current status on turf health and conditions of surrounding trees. Following the initial evaluation, a status report will be prepared and submitted to the RA. The report will include information consisting of costs to maintain the site, proposed reclamation costs (in the event of turf decline) and the required costs of cultural controls to offset the costs of chemical controls.
 - Members who are requesting the change will be directed to bring the proposed change forward to the CRRA for endorsement. The request to stop pesticide applications within the community park(s) is to be included as an item at the CRRA's annual general meeting, which must be open to the public.
 - Details of the proposed conditional moratorium on pesticide use, as well as the time and location of the meeting, must be well advertised to the community.
 - Parties involved will be provided an opportunity to present relevant information.
 - When the CRRA has approved the proposed moratorium, a copy of the motion is to be submitted to the Parks Manager, IPM Coordinator, and the appropriate Ward Alderman.
 - The agreement will be valid until the end of the fifth calendar year. This agreement is in effect as long as the site(s) is (are) maintained to the established maintenance standards agreed by the RA.
- If the CRRA were to engage in marketing efforts on this issue, the Canadian Association of Physicians for the Environment (CAPE) has worked with the Toronto Environmental Alliance (TEA) to produce a poster promoting pesticide-free parks and public spaces. To order this valuable poster for your community, contact TEA at 416-596-0660.
- In 2004, the Pesticide-Free Park in Hillhurst-Sunnyside became the location of the Party Against Pesticides, attracting performers from across the city and across the neighbourhood to entertain residents. The Party linked community groups, neighbourhood projects, the local school, the community garden, and businesses in the area. The event has become a central feature of the neighbourhood's summer with food, bands, a costume procession, and a street hockey tournament. Prior to the pesticide-free campaign, there was little community identification with the Pesticide-Free Park in Hillhurst-Sunnyside; many residents didn't even know what it was called. Now, the park has a sign listing its name and status as pesticide-free and is listed on the Hillhurst-Sunnyside walking tour.

Appendix D: Advantages and disadvantages of using chemical controls

Concerns about applying synthetic chemical controls:

- **Health and safety.** While studies show that the mammalian toxicity is very low in products that are approved by Health Canada, the following health and safety concerns exist:
 - Health Canada advises that it is “good practice for Canadians to reduce or eliminate any unnecessary exposure to pesticides and reduce our reliance on pesticides”.
 - Pesticides are the leading cause of poisonings in Canada.
 - Many synthetic pesticides have as their active ingredients substances that are listed by the United Nation’s International Agency for Research on Cancer (IARC) or other scientific authorities as carcinogens, reproductive toxins or endocrine disruptors. There is evidence that pesticides may play a role in cancers, neurological impairment, reproductive problems, and other illnesses such as Parkinson’s disease. Of particular concern is the effect of pesticides on the health of children: there are several reasons why children are more vulnerable and more widely exposed to pesticides. In Cougar Ridge, 46.9% of the residents are aged six years or younger, so children comprise a substantial portion of our population.
 - Pesticides in Canada are regulated by the Pest Management Regulatory Agency (PMRA), which operates under the authority of Health Canada and the federal *Pest Control Products Act*. The PMRA does not require pesticide manufacturers to provide information on the long-term health hazards associated with their products, unless they are being used in the workplace.
 - Pesticides are designed to kill.
- **Environmental impact.** Pesticide use contributes to air and water pollution due to toxins that seep into the soil and run off when it rains. Natural maintenance practices are healthier for the soil and plants, they achieve water conservation, and they attract birds, butterflies and pollinators.
- **Financial.** Synthetic landscaping products are costly, both in dollars and in the amount of time that is spent applying them. It is costly to try to maintain plants that have a high ornamental value but which do not do well in Cougar Ridge’s dry, windy environment. Natural maintenance practices can be cheaper in the long-run.
- **Political.** Synthetic pesticides are coming under increasing scrutiny, and will continue to do so in the coming years, much as the pesticide DDT did in the 1960s. Since DDT was banned in 1972, dozens of other pesticides have been restricted or eliminated now that scientists have a greater understanding of their effects. By July 2007, 130 communities, representing more than 40 percent of Canada’s population, had enacted bylaws or were actively working towards adoption of bylaws to curb pesticide use. The City of Calgary is currently contemplating bylaws that will further restrict the availability and use of pesticides in Calgary.⁴
- **Cultural.** The definition of what makes a “perfect” lawn is changing. The many green alternatives on the market are also a testament to the increasing numbers of people

⁴ This summer, The City of Calgary began surveying Calgarians and industry on pesticide use. This fall, The City of Calgary will be drafting a proposed bylaw and engaging stakeholder groups and citizens prior to presenting a report to Council in December 2009 and an interim report in October 2009.

who are willing to accept some weeds if it means that the turf/landscaping is healthier. The Cougar Ridge neighbourhood includes the Calgary Waldorf School, whose school yard is pesticide free. There are a large number of examples in the Cougar Ridge neighborhood of homeowners who have chosen to create a space around their home with little or no turf using hardy, native plant species and other ground cover alternatives. Incidentally, in late August 2007, the CBC Radio program “Sounds Like Canada” had a week-long listener vote on the worst weed in Canada and Kentucky Bluegrass, the grass currently used in the public turf areas in Cougar Ridge, was the winner.

- Legal. The Alberta government has banned weed-and-feed (herbicide-fertilizer) combination products effective January 1, 2010.

Counter-arguments to some of the concerns about pesticides:

- Health and safety.
 - Pesticide manufacturers and the PMRA state empirically that pesticides pose no danger if used as directed.
 - Anyone providing a pesticide application service in Alberta requires a Pesticide Service Registration from Alberta Environment (as opposed to people who provide landscaping services, who are not required to be certified – the people providing landscaping services are not the same as the people providing pesticide application services). Registered services must have at least one certified applicator at each operation location. Albertans can therefore have a reasonable expectation that the people who apply pesticides are highly qualified and that pesticides used on public land are indeed being used according to the label.
 - Pesticide use on private properties is probably a bigger concern than pesticide use on public properties. In private yards, the people applying pesticides are usually unlicensed and may use outdated practices such as broadband spraying. The toxicity of most products used within the typical home is higher than that found in the pesticides used in public spaces.
 - The medical evidence linking pesticides to cancers is not conclusive. When it comes to endocrine disruptors and some other toxic chemicals, scientists do not know at what exposure level a chemical may trigger the cell changes that lead to cancer. They do not know the cumulative effect of repeated exposure or the combined effects of different substances in a mixture.
- Environmental impact. Data from the PMRA, Health Canada, and independent studies indicates that with the environmental impact of the way The City applies pesticides is negligible. Limited spot spraying on municipal public land does not have the same impact as run-off from private lawns when individual homeowners use weed n’ feed products or when farmers spray an entire grain field with 2,4-D in an agricultural area. Moreover, cultural controls require more frequent intervention than pesticide applications and therefore can require more fossil fuels, water, and fertilizer.
- Financial. Cultural controls require more frequent intervention than pesticide applications and therefore can be costly and time consuming. Renovating the design of turf and shrub beds would also require a significant upfront capital investment, but would be cheaper in the long run.

Concerns about going pesticide-free:

- Aesthetics/public tolerance. Pesticide-free landscaping means people will have to shift their view of what makes a “perfect” lawn and accept some weeds. The City’s IPM plan recognizes that the need for treatment often depends on how much weed cover the public will tolerate, rather than on the harm to a plant or to a site. In addition, not everyone likes naturalized areas. They are not manicured, the plant mixtures are random, and the plants have relatively low ornamental value. As a result, some people feel naturalized areas look weedy.
- Practical. People are concerned pesticide-free landscaping may not work, particularly if design and cultural control alternatives are not properly applied. Pesticides can be useful in controlling pests or weeds. Native species are defenseless if they are overrun by introduced foreign invaders. Certain species can die because of the banning of a product that could protect them. Infestations of pests or weeds can be harmful to public health, the environment and public infrastructure. In these cases, pesticide use can be essential.
- Safety and playability. On sports turf, safety and playability considerations require relatively “weed-free” playing surfaces. Note, however, that Bowpoint Nursery and The Rockyview School Division, both just west of Calgary, have been using fescue grasses successfully and neither have used chemical pesticides for years.

Picture of a short-grass prairie fescue area planted in 2005 just west of Calgary. The picture was taken in 2006, in a year of limited rain - 409.6mm recorded rainfall. The company used a mix of Rocky Mountain, Hard, and Sheep’s Fescue grasses + 10% blue grama grass. While some say that Sheep’s Fescue will not do as well in heavy traffic areas (where it’s walked on a lot), the picture below is of a road that gets driven over fairly regularly by trucks. The Sheep’s Fescue grass is holding up well.

