



MEMO

MEMO TO: Robyn Carlson, City Solicitor

MEMO FROM: Matthew Mantle, Director of Planning and Development Services

DATE: January 10, 2024

RE: Long Grasses in Urban Areas to Increase Rainwater Capture - LGL2023-001 and Rain Gardens

Environmental Impacts of Modifying the Clean and Clear By-law 2014-026

Overview:

The current By-Law, as stipulated in the September 12th, 2023, Committee of the Whole Report, states that: "The city does not permit weeds and grass exceeding 8 inches in height in urban residential or commercial areas that are not within 30 meters of a waterfront or wetland area."

Amending this By-law to allow for the growth of longer grasses and "weeds" is imperative to create a habitat for pollinators and species at risk, while fostering naturalization and biodiversity within the City of Kawartha Lakes.

It is important to evaluate the potential "Pros and Cons" of such an amendment, particularly considering the environmental ramifications.

Pros:

1. Enhanced habitat (using native plants) for pollinators, encompassing bees, birds, and species at risk like the monarch butterfly. This entails not only increased access to pollen and nectar but also creation of overwintering habitat, thus promoting the City of Kawartha Lakes as a "Bee Friendly City" and "Bird Friendly City". A list of native species recommendations can be found CVC's recent 'Rain-ready' guide for a variety of LID features to help both reduce flood risk occurrences and improve stormwater quality.

More resources can be found using the following Links:

- o [Native Plant List for Breeding Birds](#)
- o [Native Plant List for Migrating Birds](#)
- o [Native Plant List for Pollinators](#)
- o [CVC's Plant Selection Guideline](#)

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2. Encourage fewer lawns and more “pollinator gardens” which can reduce greenhouse gas emissions.
3. Improved habitat for various other native species, facilitating the development of movement corridors. This would positively impact species at risk such as, but not limited to, eastern meadowlarks and midland painted turtles.
4. Heightened biofiltration and absorption of rainwater and runoff, contributing to better water quality (phosphorus, E. coli, total suspended solids) and reduced flooding risk within the CKL region. A proper vegetative filter strip can reduce up to 65% of phosphorus-reducing runoff, more engineered systems such as bioretention systems with a range of plant types can have higher reduction rates (>85%).

Table 1: Biofiltration and absorption

Technology	Runoff Reduction	Water Quality
Vegetative Filter Strip	20 - 62%	Total Suspended Solids: 20 - 80% Total Phosphorus: 20 - 65% Total Nitrogen: 20 - 60% Heavy metals: 20 - 80% [1, 2]
Bioretention System	85%	Total Suspended Solids: 88 - 99% Total Phosphorus: 68 - 100% [2, 3]
Bioswales	45% on well drained soils 10% on poor drained soils [4]	Total phosphorus: 100% [2]

5. Larger root systems help to stabilize the soil, which will in turn reduce erosion and promote healthy water quality.
6. Encouragement for landowners to reduce the use of herbicides, which could benefit the broader ecosystem, including pollinators and water quality.

Cons:

1. Potential encouragement for some landowners or businesses to allow uncontrolled growth of vegetation, thereby fostering the proliferation of noxious, non-native weeds. The growth of invasive species can significantly disrupt the composition of the habitat and pose a substantial threat to native species. The amendment can limit the growth of invasive species through compliance of areas that



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may have aggressive invasive species. A list of aggressive invasive species can be found on Ontario Invasive Plant Council: <https://www.ontarioinvasiveplants.ca/invasive-plants/species/>

2. Uneven adoption of naturalization among landowners might result in increased herbicide usage among neighboring landowners as a preventive measure, considering the potential spread of seeds to their properties.
3. Unmaintained lawns may pose a greater fire risk, especially during a period of drought.
4. Potential encouragement for some landowners and businesses to have unwanted debris thrown in the long grass.

Rain Gardens

Rain gardens are ideal for capturing the flow from disconnected downspouts so that it can infiltrate into the soil.

Rain gardens are not ponds and are not mosquito breeding grounds. Rain gardens should be designed to hold water for only a brief period of time after a storm, quickly infiltrating back into the ground. A correctly installed rain garden will hold water for about 24 hours after rainfall, 48 hours at the most. Unlike a pond or wetland, rain gardens should not generally be more than a foot deep at any given point to prevent rainwater flowing out.

Location is very important to a functioning rain garden. When looking at potential locations, look for low areas where runoff can be easily be directed into the garden. Rain gardens are a great option for residential LID retrofits because homeowners can customize the garden to suit their desired styles. They can be planted with a variety of vegetation including shrubs grasses and flowers. It is recommended that the rain garden shall be at least 3m away from the building to prevent the water collated to seep into the foundation of the building.

It is best to have rain gardens that have plants with varying heights. Although there are shorter plants that are 8 inches or less that absorb water and are beneficial in rain gardens, in general, tall species are associated with more extensive root systems that can absorb deeper water more efficiently.

Rainwater is a valuable resource. Consider collecting some of it with a rain garden that is filled with plants to benefit pollinators. Water and pollinator conservation are two goals achieved with rain gardens. With the loss of habitat, pollinators benefit from residential gardens for nectar, pollen, and larval food sources. It is important to have a diversity of plant species in rain gardens and pollinator gardens to help promote diverse

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fauna. There are many perennials, ornamental grasses, and shrubs to plant in rain gardens that will benefit pollinators.

When deciding what to plant, think about flowering succession. Ideally, something should be blooming from early spring to late fall for pollinators. This includes trees and shrubs as well as perennials, sedges, and grasses. If there is a time when there is less blooming in your yard, look for plants to fill the gap for pollinators. This way the garden will be blooming from spring to fall which will add to the esthetics.

Summary/Conclusions:

Overall, the suggested modification to the Clean and Clear By-law should have a substantial positive environmental (pollinator and water quality) impact, especially when promoting native (species) gardens. However, it is crucial to emphasize within the revised By-law the notion of "native naturalization" explicitly or to limit this amendment to areas without invasive species, thereby preventing any unintended encouragement of the proliferation of harmful vegetation.

Sources/Links

1. *Barrett, M. 2003. Roadside Vegetated Treatment Sites (RVTS) Study Final Report, Report # CTSW-RT-03-028. California Department of Transportation. Sacramento, CA.*
2. *Hutchison Environmental Sciences. 2014. Managing New Urban Development in Phosphorus-Sensitive Watersheds. Hutchison Environmental Sciences.*
3. *Sustainable Technologies Evaluation Program. 2019. Comparative Performance Assessment of Bioretention in Ontario. Technical Brief.*
4. *Sustainable Technologies Evaluation Program. 1999. Evaluation of Roadside Ditches & Related Stormwater Management Practices. Technical Brief.*

Rain Gardens

5. [Rain gardens - LID SWM Planning and Design Guide \(sustainabletechnologies.ca\)](https://www.sustainabletechnologies.ca/)
6. [Rain Gardens Are a Win/Win | Xerces Society](https://www.xerces.org/rain-gardens)

Attachments.