

COMMITTEE OF THE WHOLE – APRIL 18, 2006

LOW MAINTENANCE GROUND COVERS

Recommendation

The Commissioner of Engineering and Public Works and the Commissioner of Community Services recommend:

That this report BE RECEIVED for information purposes.

Economic Impact

There are no immediate budgetary impacts resulting from the adoption of this report.

Purpose

This report has been prepared in response to Council's requests respecting;

- alternative, low maintenance ground covers that could be utilized throughout the City where grass is planted and play fields are not needed, and
- the effect of more timely maintenance of planted materials, to ensure that intentionally installed plants are not overtaken by those growing unintentionally, that is those that are by definition, weeds.

Background – Analysis and Options

Items 5 and 6, Report No. 68, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on October 12, 2004, recommended:

“That staff provide a report with respect to alternative, low maintenance ground covers that could be utilized throughout the City where grass is planted and play fields are not needed; and

That staff report as well, or alternatively, on the effect of more timely maintenance of planted materials, to ensure that intentionally installed plants are not overtaken by those growing unintentionally, that is those that are by definition, weeds; and

That such report addresses the cost of such enhanced and timely maintenance.”

Ground Cover Options

Three main categories or types of ground covers are available: sod, turf seed mixtures and naturalized seed mixtures. Ground covers are used to achieve any combination of the following results:

- Decrease or prevent soil erosion.
- Decrease water runoff.
- Promote infiltration and ground water recharge.
- Decrease soil temperature.
- Decrease noise.
- Filter air pollutants.

Sod

Sod is a layer of soil bound by grass and plant roots into a thick mat. It is commercially available in rolled strips that are laid over an area of exposed soil. Sod stabilizes the area by immediately covering the surface with vegetation and enabling storm water to infiltrate into the ground.

Laying sod is considered a Best Management Practice (BMP) according to the Ministry of Environment's Stormwater Management Design Guidelines. Sodding is appropriate for any graded or cleared area that might erode and where a permanent, long-lived plant cover is needed immediately. It can be a temporary or permanent BMP. The primary advantages of sod are as follows:

- Provides immediate dense vegetative cover and erosion control.
- Provides more stabilizing protection than seeding (turf seed or naturalized seed).
- Generates less weed growth than seeded vegetation does.
- Can be available for site activities (open to foot traffic) within a shorter time than seeded vegetation.
- Can be placed throughout the majority of the year as long as water is available and moisture conditions in the soil are favorable (where frozen ground conditions are not present).

Some limitations to sod include:

- The cost of sod and the associated labour to place it is considerably higher than that of seeding.
- The high initial maintenance cost due to watering requirements.
- The inability of newly placed sod to withstand drought conditions.

Turf Seed Mixtures

Turf seed mixtures produce turf grasses which are usually perennial ground cover plants that are adapted to regular mowing and traffic through intense management practices. Turf seed mixtures can be applied using any one of the following three application methods:

- Hydro Seeding – A specified seed, fertilizer and mulch mixture is applied simultaneously in a water slurry through a truck mounted hydraulic seeder/mulcher.
- Mechanical Seeding – A 'Brillion' mechanical seeder accurately deposits seeds at a specified depth and rate, and restores ground in a single operation.
- Aero Seeding – A process that uses composted topsoil that is injected with a seed mixture in a Blower Truck, then literally "blown" onto the areas designated for the establishment of turf. This process allows for the use of any type of seed mixture and install precise depths of soil as required.

Naturalized Seed Mixtures

Naturalized seed mixtures can produce a wide variety of ground covers including, annuals, perennials, tree and shrub seedlings and wetland specific (riparian zone) plants. Over the past few years, wildflowers and native grasses have been introduced into the urban landscape as important contributors to the naturalization of open space lands, stormwater management ponds and channel diversion projects. These types of ground covers not only add an aesthetic quality to the community landscape but also provide important habitat for indigenous wildlife and birds, and shade the soil which reduces the need for irrigation. They also reduce many of the costs associated with grass maintenance.

A naturalized landscape environment is an important component in creating future sustainable communities in Vaughan, that simultaneously integrates the values of natural environment, healthy communities and economic vitality – the cornerstones of sustainable development.

City Design Standards

In considering ground cover requirements throughout newly developed areas of the City, three main areas or types of facilities must be considered.

1. Active Sports Activity Areas
2. Passive Park and Open Space Areas
3. Stormwater Management Pond Areas

Current City practice utilizes all three types of ground cover options. Parks and Open Spaces are assessed on a site specific basis and the most appropriate type of ground cover is selected for implementation. Sports facilities, high activity nodes and drainage swales are typically sodded. Low lying moist areas and transitions to woodlots or stormwater management ponds are typically seed with a turf or naturalization seed mix.

Stormwater management ponds have a 3.0 meter wide mow strip along their perimeters and a 1.0 meter wide mow strip along each side of a pathway. Generally, planting strategies within stormwater management facilities provide for shading , aesthetics, slope stability, safety and enhanced storm run-off pollutant removal by providing filtration of storm run-off and nutrient uptake. Naturalized native species should be used where possible to further mitigate potential environmental impacts.

A “low mow” seed mixture (categorized as a Naturalized Seed Mixture above), are grasses that have been specially developed and tested to support the claims of:

- Less mowing, because there is less vertical growth.
- Less fertilization needed because fescues require less nitrogen.
- Less watering because fescue grasses have lower rates of trans-evaporation than conventional turf grasses.
- Less maintenance, because low mow grasses perform better in less fertile soils than conventional turf.

In tests, low mow turf has exhibited a rate of vertical growth during rapid growth conditions 46% less than widely used conventional turf.

City Maintenance Program

After the assumption of stormwater management ponds by the City, the Parks Operations & Forestry Department:

- Cut the 3.0 meter mow strip at the top of the slope along the fence line 3 times per season.
- Remove dead shrubs and trees and restore accordingly.
- Remove debris 3-4 times per year.

In order to minimize weed growth in seeded areas the planted environment must allow the naturalized area to establish (take root and intensify) as soon as possible. This is the best course of action to avoid potential weed intrusion within the seeded areas.

Prior to final inspection by the Parks and Forestry section, the Developer is responsible for the establishment of the naturalized seed mixture. This often means a 2-3 year program of regular

cutting and/or manual removal of undesirable weeds and material in combination with replacements.

Once assumed, the City's maintenance program is implemented as described above. Increasing the level of service would impact on both capital and operating expenses.

Relationship to Vaughan Vision 2007

In consideration of the strategic priorities related to service delivery excellence as established by Vaughan Vision 2007, the recommendations of this report will assist in establishing and communicating service level standards that are affordable and sustainable.

This report is therefore consistent with the priorities previously set by Council. All necessary resources have been allocated and approved.

Conclusion

Naturalized, low mow seed mixtures presently used are the most appropriate form of ground cover for stormwater management ponds, while sod is the most versatile ground cover for sports fields and high foot traffic areas.

Current City criteria relating to ground cover planting requirements within the various water level areas of stormwater management facilities conform to Ministry of Environment and Toronto and Region Conservation Authority guidelines and regulations.

The ground cover design options and maintenance practices discussed herein are typically accepted as industry standard given the natural environmental conditions within York Region and surrounding areas.

Attachments

N/A

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