

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 29, 2010

Item 1, Report No. 34, of the Committee of the Whole (Working Session), which was adopted, as amended, by the Council of the City of Vaughan on June 29, 2010, as follows:

By receiving the written submission of Mr. Elliott Silverstein, 5 Belvia Drive, Vaughan, L4K 5J6, dated June 29, 2010.

**1 CARRVILLE DISTRICT CENTRE URBAN DESIGN STREETScape MASTER PLAN STUDY
FILE 14.60
WARDS 1 AND 4**

The Committee of the Whole (Working Session) recommends:

- 1) That the recommendation contained in the following report of the Commissioner of Planning, dated June 21, 2010, be approved; and
- 2) That the presentation material titled “Carrville District Centre Urban Design, Streetscape Master Plan Study”, dated June 21, 2010, be received.

Recommendation

The Commissioner of Planning recommends:

1. THAT the power-point presentation by EDA Collaborative Inc. and Giannone Petricone Associates on the “Carrville District Centre Urban Design Streetscape Master Plan Study”, BE RECEIVED.
2. THAT the draft “Carrville District Centre Urban Design Streetscape Master Plan Study” shown in Attachment #2, BE APPROVED, but shall not come into effect until the proposed amendments to OPA 651 (Carrville District Centre Plan) as identified in Attachment #3-1 of this report, are approved by Vaughan Council and/or the Region of York, and are in full force and effect.
3. THAT the proposed amendments to OPA 651 (Carrville District Centre Plan) as identified in Attachment #3-1 to this report, be considered for inclusion in Volume 2 of the City’s draft new Official Plan.
4. THAT an electronic version of the “Carrville District Centre Urban Design Streetscape Master Plan Study” shown in Attachment #2, be placed on the Vaughan Development Planning Department page on the City of Vaughan website, upon the proposed amendments to OPA 651 (Carrville District Centre Plan) as identified in Attachment #3-1 of this report, being approved by Vaughan Council and/or the Region of York, and in full force and effect.

Contribution to Sustainability

The proposed “Carrville District Centre Urban Design Streetscape Master Plan Study” is consistent with *Green Directions Vaughan*, the City’s Sustainability and Environmental Master plan, specifically:

“Goal 2: To ensure sustainable development and redevelopment.”

“Goal 3: To ensure that Vaughan is a city that is easy to get around with low environmental impact.”

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These goals will be supported by the strengthening and improvement of the public realm through compact development thereby meeting the needs and requirements of pedestrians and public transit. Furthermore, the Carrville District Centre Urban Design Streetscape will integrate environmentally sustainable materials and features into the streetscape design, introduce state-of-the-art street tree planting technology, utilize hardy native species to the maximum extent possible while minimizing long term maintenance requirements, facilitate pedestrian movement throughout the area, create new public spaces and recreational connections, ensure transit-supportive land organization, and outline strategies and measures to achieve environmentally sustainable development.

Economic Impact

There are no requirements for new funding associated with this report.

Communications Plan

The Vaughan Development Planning Department recommends posting an electronic version of the “Carrville District Centre Urban Design Streetscape Master Plan Study” shown in Attachment #2, on the Development Planning Department page of the City of Vaughan website, should Vaughan Council approve the document. This will allow future development proponents to reference this guiding document prior to submission of a development proposal. However, as the document is predicated on amendments being made to OPA 651 (Carrville District Centre Plan) as identified in Attachment #3-1 of this report, the subject document will not be posted on-line until an amending Official Plan is approved by Vaughan Council and/or the Region of York, and is in full force and effect.

Purpose

The purpose of this report is to:

1. Obtain Council approval of the “Carrville District Centre Urban Design Streetscape Master Plan Study”; and,
2. Obtain direction from Vaughan Council to amend OPA 651 (Carrville District Centre Plan) to facilitate implementation of the Carrville District Centre Urban Design Streetscape Master Plan Study, as identified in Attachment #3-1 of this report, for consideration of identified amendments for inclusion in Volume 2 of the City’s draft new Official Plan.

Background - Analysis and Options

The Carrville District Centre is generally located at the four corners of Rutherford Road and Dufferin Street, including lands in Planning Blocks 10, 11, 17 and 18, in Carrville-Urban Village 2, as shown on Attachment #1.

The “Carrville District Centre Urban Design Streetscape Master Plan Study” provides detailed Urban Design Guidelines and a Streetscape Master Plan based on the urban design objectives of the Carrville District Centre Plan (OPA 651). In addition, the site was evaluated relative to the presence of strong natural features, topography, woodlot and ravines as well as existing and proposed built features.

The proposed “Carrville District Centre Urban Design Streetscape Master Plan Study” is generally in conformity with OPA 651, and respects the approved maximum densities permitted in the current Carrville District Centre Plan. However, built form massing was not fully resolved in sufficient detail in OPA 651 and left concerns about street-related built form and its potential impact on the streetscape and open space character within the Carrville District Centre. OPA 651

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proposed building heights in the range of 2-4, 2-6 and 2-8 storeys and a maximum height of 16 storeys to accommodate the higher densities of the Carrville District Centre. These relatively low heights and proposed densities would result in long, flat monotonous blocks of buildings along streets with little opportunity for articulation of streetscape spaces and punctuation of the skyline.

City's New Official Plan - Volume 2

On June 14, 2010, a Committee of the Whole (Public Hearing) was held to consider a report prepared by the Vaughan Policy Planning Department to introduce Volume 2 of the draft Official Plan, which represents a consolidation of existing secondary plans including OPA 651 (Carrville District Centre Plan). The Staff report indicated that comments on the Public Hearing report are requested no later than July 5, 2010, and that the Policy Planning Department will be submitting a report to a Committee of the Whole meeting, anticipated on August 31, 2010, in response to comments received at the June 14, 2010, Public Hearing or in writing.

A letter dated May 21, 2010, from The Remington Group, who is a landowner in the Carrville District Centre, was received by the City, and they wrote the following (in part):

“The Remington Group is a significant owner of lands located within the Carrville Centre, at the intersections of Dufferin Street and Rutherford Road. The planning for these lands involved a considerable amount of public input consultation, and resulted in the adoption of the Carrville Centre Secondary Plan (OPA 651) in 2006. Further, we have been working with the City and their consultant team with respect to the proposed Urban Design Guidelines for Carrville which are scheduled to come forward shortly.”

“We also want to ensure that the extensive work that has gone into the Carrville Centre will continue to form part of the vision for these lands, and that any changes resulting from the development of the Urban Design Guidelines will be implemented in the current Official Plan. We believe the timing of the completion of the Urban Design Guidelines is compatible with the schedule for the adoption of the Official Plan, therefore allowing this to happen.”

The proposed amendments to OPA 651 as identified later in this report, will be considered for inclusion in Volume 2 of the City's draft new Official Plan.

Implementation of Proposed Enhancements to Carrville District Centre Plan (OPA 651)

The final City of Vaughan Official Plan document will be produced in two volumes. Volume 1 will introduce policies that will be generally applicable throughout Vaughan. Volume 2 will contain the secondary plans, including the Carrville District Centre Plan (OPA 651). Furthermore, built form massing was reviewed in detail in the “Carrville District Centre Urban Design Streetscape Master Plan”, and modifications to the deployment of the original densities contemplated in OPA 651 are proposed that would result in several key enhancements. As a result, to implement the proposed Carrville District Centre Urban Design Streetscape Master Plan Study, the following Sections to OPA 651 will be required to be amended:

- a) Section 2.0 - Development Principles and Objectives
- b) Section 3.0 - Land Use Designation
- c) Section 4.0 - Urban Design Policies
- d) Section 6.0 - Transportation Policies

The proposed specific changes to OPA 651, which are highlighted in a chart on Attachment #3-1, are discussed below:

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a) Section 2.0 - Development Principles and Objectives

The presence of a high quality urban square defined by surrounding high density buildings with an animated commercial/retail podium at grade in the northwest quadrant of the Carrville District Centre, shown on Attachment #3-2, provides for a functional and vibrant public realm. Urban squares promote a comfortable urban environment conducive to residential and commercial usage. The policies in OPA 651 must be amended to reflect that an urban square be treated in the same calibre as a Main Street.

b) Section 3.0 - Land Use Designation

Improvements to OPA 651 respecting the land use plan, building heights, floor space index (built form), and road network will provide opportunities for articulation of streetscape spaces and punctuation of the skyline through built form.

i) Land Use Plan

As shown on Attachment #3-2, the improved land use plan includes modified street patterns that create a permeable urban fabric. A neighbourhood park that is located at the northwest quadrant of Rutherford Road and Dufferin Street will be relocated further north and will be integrated in the community to create an Urban Square in a more functional central location linked with a Main Street where it will take on a vibrant multi-use urban character. There will be a concentration of retail and commercial uses on the Main Street, while still maintaining the 36 m right-of-way for arterial roads. A hierarchy of parks and open space will offer the community choices of passive and active recreational needs, which will act as a greenway linkage of an open space system for continuous pedestrian and bicycle connectivity. For example, a larger contiguous park space is realized through the proposed elimination of a road section link resulting from steep grades on the north side of the woodlot east of Dufferin Street. Further, the enhancement will promote a transition from public realm streetscapes to semi-private courtyard and pocket parkettes.

ii) Building Heights

While maintaining the existing proposed maximum densities of OPA 651, the maximum building heights have increased from 16 to 25 storeys. The increased heights, as shown on Attachment #3-3, would predominately be concentrated at the two proposed gateways along Dufferin Street at Rutherford Road and Marc Santi Boulevard within the district, as shown on Attachment #1.

iii) Floor Space Index (Built Form)

The appropriate siting and organization of buildings can create a street space and built form that provides interest and comfort at the ground level for pedestrians. The improvements to OPA 651 will facilitate better control of the sizes of buildings and allow for greater building heights and decreased building footprints with better articulation of streetscape spaces. This will provide better opportunities for built form enhancements in the Carrville District by the redistribution of densities, as shown on Attachment #3-4. The result is no significant increase in density (from 1.70 to 1.72 FSI) within the District Centre, as shown on Attachment #3-6.

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The revised built form massing strategy utilizes a podium and point tower configuration to achieve the proposed densities, with the podium fronting on streetscapes at 2 storeys transitioning to 6 storeys then to point towers at selected locations. The revised building footprints are reduced from 28% to 22% which results in increased at-grade space and pedestrian-oriented streetscapes, as shown on Attachment #3-7. As a result, skyline punctuation is achieved utilizing point tower heights of up to 22-25 storeys at strategic locations to create gateways to the Carrville District Centre at the main intersection of Rutherford Road and Dufferin Street, and the intersection of Dufferin Street and Marc Santi Boulevard, as illustrated on Attachment #3-8.

iv) Road Network

As shown on Attachment #3-5, the improvements to OPA 651 will facilitate a modified grid pattern road network that is sensitive to the natural topography of the area, woodlot and ravines, and existing and proposed built features, particularly at the northeast quadrant of the district and north of Marc Santi Boulevard in the northwest quadrant. The road network will also establish a Main Street, which will facilitate the enhancement of the public square. Furthermore, pedestrian and bicycle routes will be integrated into the proposed road and open space networks. Overall, the road network will create a permeable urban fabric.

Cumulatively, the above noted improvements establish a clear streetscape and open space structure hierarchy that would create a unified urban district of a higher quality urban character.

c) Section 4.0 - Urban Design Policies

Modifications to the urban design policies of OPA 651 are required to generally allow for increased building heights with smaller footprints to create more ground space. Furthermore, minor modifications are required related to adjustments to street tree location, widened sidewalks where possible, the deletion of lay-by parking spaces along Dufferin Street and Rutherford Road, and the addition of "Urban Square" to the "Main Street" description. These modifications to the urban design policies will provide added flexibility in the design arrangements to achieve the principles and objectives of the Plan.

d) Section 6.0 - Transportation Policies

The modified road system is illustrated on Schedule "D" of Attachment #3-4, which will permit lay-by parking on the Main Street that fronts commercial and retail development in the Carrville District. The Region of York has advised the City that on-street parking on Rutherford Road and Dufferin Street will be assessed through an Environmental Assessment on Dufferin Street and Rutherford Road. Furthermore, a transit hub shall be provided in the District and the location of such transit hub shall be determined by the City and York Region Transit. The result will be a streetscape hierarchy that integrates Dufferin Street and Rutherford Road as fully functional transit supportive urban streets for vehicles, pedestrians and cyclists.

Overview of Modifications

The overall modifications to OPA 651 as noted above will cumulatively achieve the goals and objectives of the Plan that will evolve to be an urban District Centre with a compact, human scale, physical form that is designed to be pedestrian-friendly and transit supportive. Through the amendments and modifications of the original design policies of OPA 651 illustrated on Attachment #3-10, policies have been proposed that will establish a Main Street that will encompass a modified block configuration, as shown on Attachment #3-9, to create functional building sites that positively address the streets, parks and open spaces, include an Urban

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Square that creates an urban social hub defined by edges of mixed-use buildings and integrated landscape elements, provide additional ground space by reducing building foot prints and increasing building heights, allow for permeable road networks, and incorporate open space systems with built form, as illustrated on Attachment #3-11.

Relationship to Vaughan Vision 2020/ Strategic Plan

This report is consistent with the priorities set forth in Vaughan Vision 2020/Strategic Plan, through the following initiatives, specifically:

Service Excellence:

- Lead & Promote Environmental Sustainability

Management Excellence:

- Plan and Manage Growth & Economic Vitality
- Demonstrate Leadership & Promote Effective Governance

Regional Implications

The Region of York has participated in the “Carrville District Centre Urban Design Streetscapes Master Plan Study”. The Study supports key elements of the Region of York Official Plan, adopted by Council on December 16, 2009, including: “City building, focusing on Regional Centres and Corridors and including innovation in urban design and green building”, and “New community areas, designed to a higher standard that includes requirements for sustainable buildings, water and energy management, public spaces, mixed-use, compact development, and urban design”.

Conclusion

The “Carrville District Centre Urban Design Streetscape Master Plan Study” provides detailed Urban Design Guidelines and a Streetscape Master Plan based on the urban design objectives of the Carrville District Centre Plan (OPA 651). The Study will guide future sustainable development in the Carrville District Centre with compact, ‘pedestrian-friendly’ and transit supportive physical form, provides a unique identity for the Carrville District Centre, and will promote private sector investment within a strong urban framework. In order to implement the Carrville District Centre Urban Design Streetscape Master Plan Study initiatives, amendments to OPA 651 shown in Attachment #3 are required to the block configurations, land use, maximum building height, built form, and road network, and will be considered for inclusion in Volume 2 of the City’s draft new Official Plan. Upon Vaughan Council and/or the Region of York approving an amendment to the Official Plan, and coming into full force and effect, the approval of the “Carrville District Centre Urban Design Streetscape Master Plan Study” should take effect, and can then be placed on the Development Planning Departments page on the City of Vaughan website.

Attachments

1. Study Area Map
2. Draft Carrville District Centre Urban Design Master Plan Study
(MAYOR & MEMBERS OF COUNCIL ONLY)
- 3.1 Proposed Amendments to OPA #651
- 3-2 Schedule “A” Land Use
- 3-3 Schedule “B” Heights
- 3-4 Schedule “C” Floor Space Index
- 3-5 Schedule “D” Road Network

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- 3-6 Appendix “B” – Development Summary Comparison Table
- 3-7 Diagrammatic Comparison of OPA 651 and Proposed
- 3-8 FSI Comparison of OPA 651 and Proposed
- 3-9 Appendix “A” – Development Block Areas
- 3-10 3-D Comparison of OPA 651 and Proposed
- 3-11 3-D Comparison of OPA 651 and Proposed

Report prepared by:

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/CM

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

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Item 2, Report No. 34, of the Committee of the Whole (Working Session), which was adopted without amendment by the Council of the City of Vaughan on June 29, 2010.

2 SUSTAINABLE ALTERNATIVES TO CONVENTIONAL TURFGRASS LAWNS
FILE 22.26
WARDS 1 – 5

The Committee of the Whole (Working Session) recommends:

- 1) That the recommendation contained in the following report of the Commissioner of Planning, dated June 21, 2010, be approved; and**
- 2) That the presentation material titled “Sustainable Alternatives to Conventional Turfgrass Lawns”, dated June 21, 2010, be received.**

Recommendation

The Commissioner of Planning recommends:

1. THAT the “Sustainable Alternatives to Conventional Turfgrass Lawns” report and power point presentation by the Development Planning Department, BE RECEIVED.
2. THAT the brochure, “The New Lawn – From Organic Lawn Care to Ground Cover Alternatives” shown in Attachment #1, BE APPROVED, for distribution to the public.
3. THAT an electronic version of the brochure, “The New Lawn – From Organic Lawn Care to Ground Cover Alternatives” shown in Attachment #1 be featured on the Development Planning Department’s page and the Pesticide Free Vaughan page on the City of Vaughan’s website.

Contribution to Sustainability

Consistent with *Green Directions Vaughan*, the City’s Sustainability and Environmental Masterplan, the evaluation of sustainable alternatives to the conventional turfgrass lawn relates to a number of goals and objectives outlined by the plan, specifically:

Goal 1: To significantly reduce our use of natural resources and the amount of waste we generate.

Goal 2: To ensure sustainable development and redevelopment.

In the context of urban development and redevelopment, the consideration of land covers is a component of sustainable site design, with potential synergies in storm water management, erosion and sedimentation control, energy efficiency, resource conservation, biological and genetic diversity, local climate regulation, reduction of air and water pollutants and potable water consumption.

Economic Impact

There are no requirements for new funding associated with this report.

Communications Plan

The Development Planning Department recommends the distribution of a colour brochure, “The New Lawn – From Organic Lawn Care to Ground Cover Alternatives”, as shown in Attachment

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#1, at the front counter of the Development Planning Department and at the information table in the Vaughan Civic Centre. The objective of the brochure is to inform the public and development industry on various alternatives to the conventional kentucky bluegrass lawn.

Additionally, the Development Planning Department recommends posting an electronic version of the same brochure, as shown in Attachment #1, on the Development Planning Department's page and the Pesticide Free Vaughan page of the City of Vaughan website. This communication tactic frames the issue within the broader health, environmental and financial contexts.

The City of Vaughan Economic Development Department is currently partnered with the Toronto and Region Conservation Authority to deliver a series of public workshops in June, 2010 on healthy lawn care and organic gardening. These workshops will include information on alternatives to turfgrass lawns. It is noted that during the 2009 Earth Week, the Economic Development Department hosted a well-attended staff workshop on organic lawn care.

Purpose

The purpose of this report is to outline sustainable alternatives to the conventional lawn in the context of urban development and redevelopment in the City of Vaughan.

Background - Analysis and Options

Item 1, Report No. 39 of the Committee of the Whole (Working Session), adopted by Council of the City of Vaughan on September 24, 2007, resolved that "staff provide a report to a future Committee of the Whole (Working Session) meeting on alternatives to traditional lawns".

The Vaughan Engineering and Community Services Commissions reviewed and provided recommendations for the use of alternative, low maintenance ground covers for municipal lands in Item 10, Report No. 21 of the Committee of the Whole, adopted by Vaughan Council on April 24, 2006.

The subject report identifies opportunities for the use of alternatives to the conventional kentucky bluegrass lawn on private lands in the context of urban development and redevelopment. Sustainable alternatives have been identified based on the criteria of increasing species diversity and reducing irrigation, energy consumption and chemical use.

Sustainable Alternatives to the Conventional Turfgrass Lawn

Attachment #2 details the following alternatives that can be used either as a lawn replacement or to reduce the amount of conventional lawn on private development and re-development lands in the City of Vaughan:

a) The Conventional Kentucky Bluegrass Lawn

Kentucky bluegrass currently forms the basis of most lawns because it has a dark green colour, medium-fine texture, dense growth, uniformity, good spring green-up, good low temperature tolerance, good foot traffic tolerance and is widely available in sod form. Native to Europe and northern Asia, kentucky bluegrass grows best in cool, moist weather on well-drained, fertile soils. Kentucky bluegrass relies upon watering, fertilization and mowing schedules to produce thick, green sod. This conventional lawn is associated with an intensive maintenance regime including: irrigation, mowing, fertilizing, aerating, adding soil, de-thatching, reseeding and patching. Under conditions of high temperatures, limited rain fall, low soil fertility, or poor drainage, the amount of kentucky bluegrass will decline, allowing undesirable weed species to invade.

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b) The Conventional Lawn With Organic Lawn Care

Maintaining sod with a low input turf management program reduces the environmental impacts of mowing, nutrient loading, water consumption and chemical use for weeds, pests and diseases. Management steps to achieve a low input lawn are: lawn conversion, soil building, grass selection, mowing and thatch management, minimal fertilization, weed control and tolerance, integrated pest management and sensible irrigation (as outlined by the United States Environmental Protection Agency, Watershed Protection Techniques. 1(5): 254-264 "Toward a Low Input Lawn"). A low input strategy is to use conventional turf only where it is the best plant to fulfill a particular function, such as providing a children's sports area.

c) Eco Lawn

Eco lawns are turfgrass mixtures developed to require less maintenance and fewer inputs to stay green and healthy, specifically, less frequent mowing, less fertilizing and less watering. In Ontario, eco lawn seed mixtures are most commonly comprised of fescue grass blends mixed with wear-tolerant broadleaf species. There is no specific formula for the best low-maintenance lawn mix, but a general guideline provided by the Canada Mortgage and Housing Corporation is 40 per cent fescues, 40 per cent other grasses and 20 per cent broadleaf species. These percentages are based on preference and the intended use. For instance, in areas where there will be a great deal of regular intensive activity, the amount of fescue should be reduced. Fine fescues (creeping, chewings, hard) have a fine leaf texture and can adapt to a wide range of soils. These grasses have the lowest fertilizer requirements of any of the cool-season grasses. Fescues have deep roots that provide greater drought tolerance. However these deep roots also limit the current economic viability of mass sod production. Low input and low maintenance turfgrasses are readily available on the Canadian market as seed mixtures only. Brands in Ontario are: "Eco-Lawn", "Enviro-Turf", "Low Maintenance Lawn Mixture" and "NoMowGrass".

d) White Clover Lawn Mix

White clover (*Trifolium repens*) was commonly included in North American turfgrass mixtures until the 1950's. Clover is once again gaining popularity due to a rising interest in organic lawn care. A clover lawn is commonly comprised of white clover mixed with turfgrass. Clover and turfgrass can be seeded together or clover can be overseeded into an existing turfgrass lawn. Clover and grass are complementary in their ecological functioning and one supports the other. The nitrogen requirements and low summer production of kentucky bluegrass make it ideal for seeding with a legume such as white clover. White clover may require reseeding every two or three years or until naturally invading wild white clovers establish. If the amount of white clover in the lawn becomes greater than desired, allowing the companion turfgrass height to reach 20 to 30 centimetres (8 to 12 inches) will encourage the turfgrass to compete better with the white clover. The key benefit of white clover is its nitrogen-fixing capability. As a legume, clover has the ability to fix its own nitrogen from the atmosphere. Clover's other advantages over conventional turfgrass are that it remains green longer in both drought and cold conditions, it requires less mowing, outcompetes weeds, and is immune to female dog urine. Clover attracts bees which is beneficial for local biodiversity but a limitation for application to child play areas. White clover is not indigenous to Canada.

e) Micro Clover Lawn

A relatively new development in turfgrass breeding, micro clover lawn seed mixtures are available in Europe, the United States, and more recently in Canada. Micro clover lawns are comprised of a miniature clover cultivar mixed with fescues and dwarf perennial ryegrass to grow like a dense, compact lawn. The desired level of micro clover in the seed mix is below 50 per cent. When seeded, grass will appear within 7 to 10 days under good growing conditions and clover will appear within 21 to 28 days. The key advantage of a micro clover lawn is that it has a more

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uniform appearance (less patchy) than an ordinary white clover lawn. Clover produces stolons* which allow it to spread evenly and regenerate itself after stress. Micro clover lawns tolerate wet conditions (except constant flooding) and a variety of sun to shade and soil conditions. Micro clover withstands high foot traffic including shearing action from intensive use. It requires less water, less mowing, less weeding and no nitrogen fertilizer compared to a conventional kentucky bluegrass lawn. The key limitation of a micro clover lawn is that it is available as a seed mixture only. Additionally, the balance of turfgrass and clover must be kept in ratio in order to maintain its durability under wear, especially for high activity field applications.

** stolon n: A long horizontal stem, as of the currants, that grows along the surface of the soil and propagates by producing roots and shoots at the nodes or tip.*

f) Low Flowering Lawn

A low flowering lawn of drought resistant, hardy grasses, legumes and flowers can withstand heavy to light foot traffic depending on the seed mix. Grasses are the structure of the mix and provide durability. The advantages of a low flowering lawn are that it requires no nitrogen fertilization (because of the inclusion of leguminous species), less irrigation and less mowing than a conventional kentucky bluegrass lawn. A low flowering lawn seed mix formulated for Ontario will include native and flowering species that contribute to pollination and biodiversity. The disadvantages of a low flowering lawn are that it is available in seed form only and will take two to three years to fully establish. Clover and other flowering species in the mix attract bees which is beneficial for biodiversity but a limitation for application to child play areas.

g) Naturalized Meadows

Meadow seed mixes of native grasses and wildflowers are generally used in larger hectareage projects for either restoration or ornamental purposes. A meadow seed mix can be selected to thrive in almost any site condition (dry to wet, clay to sandy soils, etc.). Establishing a meadow requires proper site preparation, seed selection, seeding rate and maintenance regime. Once established, a naturalized meadow requires mowing only once or twice a year in the late fall or early spring, no irrigation and no fertilizer. Meadows contribute to aesthetic diversity and biodiversity, providing food and important habitat for indigenous birds, wildlife and insects. Naturalized meadow landscapes can be designed to look cared for without being intensively managed. Aesthetic considerations are important as they impact community acceptance of new and alternative planting initiatives.

h) Low Creeping Perennial Ground Covers (native & adaptive species)

Low creeping perennial ground covers, such as Thyme, Sedum and Moss, can be used as lawn alternatives to replace or reduce the amount of turfgrass lawn. Many ground cover species will flourish in conditions where it is difficult to grow and maintain turfgrass, such as on steep slopes or rocky soils. When selecting low creeping perennial ground cover plants, consideration must be given to the site and soil conditions, plant hardiness and growth habit, proximity to natural areas, aesthetics, and the uses and functions of an area. The ability of a ground cover to withstand different levels of foot traffic, from low to high use, varies by species and cultivar. The advantages of using native or adaptive perennial ground covers are they require no mowing, and little or no fertilization, weeding or irrigation when established. Some ground cover species will go dormant in the winter, but many provide all season interest. The most successful ground cover species spread rapidly and aggressively which means that introduced species such as periwinkle, goutweed and English ivy are classified as invasive. Invasive ground cover species should not be planted near natural features to avoid jeopardizing local ecosystems.

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i) Combinations of Trees, Shrubs, Ornamental Grasses & Perennials
(native & adaptive species / xeriscapes)

A plant matrix of trees, shrubs, ornamental grasses and herbaceous plants can be planted for ornamental or restoration purposes to either replace or reduce the amount of turfgrass lawn. When native plants or adaptive species are selected, less or no irrigation and fertilization is required. The maintenance regime for ornamental plantings includes pruning and weeding. The more structurally complex vegetation created by trees, shrubs and ground covers provides shading, pollution reduction, erosion control, storm water management, microclimate and biodiversity benefits.

Xeriscaping is a name for landscapes designed for water conservation. Potable water use can be significantly reduced through efficient watering techniques and by replacing water demanding plants with water efficient and locally adapted species. Xerophytic plants require less water or have better methods of obtaining or retaining the available water. Good indicators of xerophytic species are plants that have fuzzy, waxy or silver, aromatic or finely divided foliage or plants that are dormant during the summer's heat. Native plants are well-adapted to local climate conditions and can commonly survive droughts. Xeriscapes also provide [benefits](#) related to biodiversity conservation when native species are included. One of the first principles of xeriscaping is to reduce the amount of conventional turfgrass in a landscape design.

j) Mulch

Mulches can be used alone or in combination with native, adaptive or xeriscape plants to replace or reduce the amount of turfgrass lawn. The primary benefits of mulches are easy installation, no irrigation, no fertilizer, no mowing, low maintenance, high perviousness for surface water infiltration, and surface roughness to reduce the speed of storm water flow.

k) Permeable Paving - Reinforced Grass Paving Systems

Reinforced grass paving systems, such as "Grasspave", are a matrix of flexible plastic, recycled rubber, or concrete with voids that can be filled with a growing medium and grass. The best applications are where a green lawn is desired, but greater surface stability is required, such as walkways, parking lots, low use laneways, and emergency access routes. Open grid paving systems have low vehicle speed restrictions (approximately 30 km/hr). They are designed to manage storm water through retention and natural infiltration, however, it is important to maintain surface infiltration and storage capacity in the system to allow an adequate volume of storm water to be captured and treated.

l) Permeable Paving – Unit Pavers

Unit paver systems are interlocking concrete paving blocks separated by narrow gaps which are filled with sand or gravel. Unit pavers can be used in such areas as private driveways, walkways, urban squares, outdoor gathering spaces and parking areas. The key benefits of unit pavers are they reduce storm water runoff volume, allow for groundwater recharge, remove pollutants, lower heat pollution in river systems and can improve infrastructure performance and footprint. The key limitation of unit paver systems is their weight and traffic volume capability. Unit pavers are generally not appropriate for heavy volume roads or commercial traffic areas. However, the range of accepted applications is expanding and some concrete paver companies have developed products specifically for industrial applications.

Information Brochure

The Vaughan Development Planning Department has designed the colour brochure "The New Lawn – From Organic Lawn Care to Ground Cover Alternatives", as shown in Attachment #1. This information brochure, once approved by City Council, will be made available to the public

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and development industry at the information table in the Vaughan Civic Centre and at the Development Planning Department front counter. An online version of the brochure will also be made available on the City's website.

Relationship to Vaughan Vision 2020/Strategic Plan

This report is consistent with the priorities set forth in Vaughan Vision 2020, particularly "Lead and Promote Environmental Sustainability".

Regional Implications

The Region of York's Official Plan, which was adopted by Regional Council on December 16, 2009, references sustainable land covers in "Sustainable Cities, Sustainable Communities", specifically:

Page 54 (33.) "It is the policy of Regional Council to encourage the use of water efficient, drought resistant landscaping by: a) providing a min. 6 inches of topsoil; b) installing drought resistant sod; c) providing landscape features that minimize the demand for water and synthetic chemicals by utilizing native and drought resistant species; and d) installing permeable driveway surfaces."

Conclusion

In this report, sustainable alternatives to the conventional kentucky bluegrass lawn are presented within the context of urban development and redevelopment. The selection of land covers is a component of sustainable site design, with potential synergies in storm water management, erosion and sedimentation control, energy efficiency, resource conservation, biodiversity, and the reduction of the urban heat island effect and potable water consumption.

Attachments

1. Brochure: "The New Lawn - From Organic Lawn Care to Ground Cover Alternatives" (Colour copy for Councillors only)
2. A Comparison Chart of Sustainable Alternatives to Conventional Turfgrass Lawns

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/CM

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)