



Planning and Building Department

TO: Community Development Committee

SUBJECT: Request to Amend Zoning By-law 2020 to Permit Artificial Grass in Residential Front Yards

Report Number: PB-90/11

File Number(s): 520-01

Report Date: November 14, 2011

Ward(s) Affected: 1 2 3 4 5 6 All

Date to Committee: December 12, 2011

Date to Council: December 19, 2011

Recommendation: No change to By-law 2020 with regard to artificial grass.

Purpose:

- Address goal, action or initiative in strategic plan
- Establish new or revised policy or service standard
- Respond to legislation
- Respond to staff direction
- Address other area of responsibility

Respond to proposal to amend the Zoning By-law to permit the use of artificial grass in *Landscaped Open Space Areas* in Residential Zones.

Reference to Strategic Plan:

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| 1) Vibrant Neighbourhoods | 1a. Develop a plan to enhance the use of public spaces in neighbourhoods |
| 3) Excellence in Government | 4b. Implement a plan to reduce the city's greenhouse gas emissions |

Background:

Currently Part 16, "Definitions", of the Zoning By-law 2020 does not explicitly indicate whether or not artificial grass is permitted. The definition of *Landscaped Open Space Area* is:

"an open, unobstructed space between a property line and a building elevation facing a street, excluding any permitted encroachment into a required yard, which is dedicated to the growth and maintenance of grass,

flowers, shrubs, trees and other landscaping including a walkway, but does not include any driveway, ramp or parking area, whether surfaced or not, or any open space beneath a building or structure.”

The current interpretation of this policy is that artificial grass is not permitted in front yard areas containing *Landscaped Open Space Area*. The definition of *Landscaped Open Space Areas* is specific to front yard lot areas in the Zoning By-law 2020. Private residential landowners are currently able to legally install artificial grass in backyard and side yard areas.

In May 2010, City Planning staff were approached by a private company specializing in the installation of artificial grass to consider an amendment to the City of Burlington Zoning By-law 2020, to permit artificial grass in private residential front yards.

City staff from the Planning and Building, Engineering, Roads and Parks Maintenance, Parks and Recreation, and Environment Departments were consulted to discuss this request.

The request was discussed at the Staff Development Committee in June 2010. It was recommended by the Staff Development Committee that the requested amendment be more thoroughly explored and that a staff report be submitted to Council for consideration.

Thus far, there have been no requests to amend the definition of *Landscaped Area*, which applies to medium-density residential, high-density residential and commercial properties among others. This definition can be revisited if necessary during the zoning by-law review.

Discussion:

1. Description of Artificial grass

The proposed artificial grass product is installed on a bed of compacted aggregate material. The proponent has advised City Staff that the product does not contain rubber crumb infill. The proponent is promoting the use of artificial grass in front yard areas of applicable Residential zones for its unblemished appearance, reduced water use and reduced maintenance along with the lack of need for fertilizer and pesticides.

2. Use of Artificial grass

2.1. Use of Artificial grass in the City

To date the City has strategically installed artificial grass at several sport field and playground/water park facilities, including:

- the Orchard Community Park Soccer Field (Ward 5);
- the Waterfront Centre Splash Pad (Ward 2); and
- the Sherwood Forest Park Soccer Field (and dome – Ward 5).
- the Norton Community Park Playing Fields (Ward 6)
- the New City Park Soccer Fields (Ward 1)

Both the Catholic and Public School Boards have currently installed, or are in the process of installing, artificial grass facilities for sport field applications, including:

- Assumption High School (Ward 4);
- Corpus Christie High School (Ward 5);
- Notre Dame High School (Ward 6);
- Nelson High School (2011 - joint funding with City – Ward 4); and
- Alton High School (2012 – Ward 6).

2.2. Use of Artificial grass on Private Residential Property

Private residential landowners are currently able to legally install artificial grass in backyard and side yard areas. The total number of private residential properties currently maintaining artificial grass products legally as permitted under the Zoning By-law 2020, or illegally, is unknown.

3. Applicable Policies and By-Laws

3.1. Official Plan

Pursuant to the *Planning Act*, the Zoning By-law 2020 implements the objectives and policies of the City of Burlington's Official Plan. The following sections of the Official Plan are relevant to the proposal:

- Part I, Section 1.0, Mission Statement, states that the City is committed to attaining the highest standards of Ecological Health, Economic Growth and Community Development through implementation of the principles of Sustainable Development.
- Part I, Section 3.0 (b), Guiding Principles, includes land use decisions that support a healthy, clean and sustainable community based on an ecosystem approach and the implementation of the principles of *Sustainable Development*. An ecosystem approach is a comprehensive strategy for the

integrated management of land uses.

- Part VIII, Definitions, of the Official Plan defines *Sustainable Development* as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
- Appendix E, Principles and Objectives of *Sustainable Development*, includes the following Objective: “Protection of Natural Resources: Preserve and extend accessible green spaces... for future generations.”

3.2. Lot Maintenance By-law 12-2011

The City’s enacted Lot Maintenance By-law 12-2011 defines naturalized areas as

“a yard or a portion of a yard containing vegetative growth that does not form part of a natural garden that has been deliberately implemented to produce ground cover, including one or more species of wildflowers, shrubs, perennials, grasses or combinations of them, whether native or non-native, consistent with a managed and natural landscape other than regularly mown grass”.

This definition in the Lot Maintenance By-law does not include artificial grass, and thus does not currently support the use of artificial grass in naturalized areas.

4. Analysis

City of Burlington staff have provided comments on the proposal, included in Appendix B. Comments relate to logistical issues such as the difficulty of regulating artificial grass usage, the possibility of damage to curbside artificial grass, unique use of the product on City properties and challenges of replacing the product. Comments also relate to environmental issues such as run-off constraints, urban heat island effect, habitat fragmentation, ecological process constraints and cumulative impact. The known and potential negative environmental, social and economic impacts associated with the subject product do not align with the policy framework of the Official Plan, nor with the City’s Lot Maintenance By-law 12-2011.

As noted in Section 2, artificial grass is currently used on site-specific City properties or on approved site-specific institutional sites. Planning staff are of the opinion that the function and intensity of use on these sites are not comparable to those on residential front yard areas.

A limited site-specific use of artificial grass in Residential Zones may not trigger significant negative impacts. However, the cumulative impacts associated with the widespread use of artificial grass must be considered.

5. Consultation

Municipal, agency and public comments have been received regarding the proposed amendment of artificial grass to the definition of *Landscaped Open Space Area* in the Zoning By-law 2020. These comments are summarized below and provided in comprehensive format in Appendices A to C. The comments were provided in response to requests for comments from mid-2010 to early 2011, and do not include changes that may have occurred since this time.

5.1. Other Municipal Practices

Comparable municipal policies are outlined in Appendix A. As of previous circulations, artificial grass was not supported in the municipalities of Waterloo and Mississauga, but was permitted in Hamilton, under certain provisions. The issue had not arisen in the City of St. Catharines when planning staff were consulted.

5.2. Burlington Staff and External Agency Comments

City staff have reviewed the proposal and comments are provided in Appendix B. Generally, staff did not support the proposal due to logistical and environmental constraints.

The Sustainable Development Committee, Region of Halton and Conservation Halton also provided comments. The external agency comments are summarized in Appendix C. In general, all agencies were opposed to the proposal due to conflict with agency policies related to environment or sustainable development.

5.3. Public Consultation

City staff conducted a Public Open House on January 26, 2011, to allow the public the opportunity to comment on the proposal. Advertisements requesting public input were also circulated on January 14 and January 21, 2011. Public comments resulting from this correspondence are provided in Appendix C of this report. They include comments from individuals affiliated with artificial grass providers.

Public comments in support of the proposed amendment indicate that artificial grass is aesthetically pleasing, appears realistic, is appropriate for certain areas, uses recycled materials, is easy to maintain, helps to conserve water, assists with drainage on site, and reduces pesticides and carbon emissions. Such comments also relate to property rights and the presence of artificial grass on City property.

Public comments opposed to the proposed amendment cite that artificial grass is aesthetically displeasing, will increase the prevalence of artificial lawns in the City, has a negative impact on urban wildlife, adds stress on aggregates, contradicts sustainable gardening principles, contributes to global warming, is flammable and toxic, adds to waste, negatively impacts ecosystem functions, is not sufficiently researched and would

compromise health and fitness. Such comments also refer to the need to promote low-maintenance lawn vegetation.

Financial Matters:

Financial impacts of approving this amendment are unclear at the time. Financial impacts may result due to expectations that the City would provide compensation for artificial grass damaged during city operations.

Environmental Matters:

It is the opinion of City staff that installation of artificial grass would be detrimental to the environment for reasons listed in Appendix B. The use of naturalized, low-maintenance landscape options can be promoted as an alternative to artificial grass.

Communication Matters:

There are no additional public consultation sessions being considered at this point, since a Public Open House has already been convened.

Conclusion:

Based on the review by City staff, and the comments provided by the public, Sustainable Development Committee, the Region of Halton, and Conservation Halton, City Planning staff recommends no change to Zoning By-law 2020 for the purpose of permitting artificial grass.

Respectfully submitted,

Nisha Shirali
Environmental Planner
x. 7536

Reviewed by A. Gummo

Appendices:

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| <ul style="list-style-type: none">A. Practices in Other MunicipalitiesB. Burlington Staff CommentsC. External Committee/Agency CommentsD. Public Comments |
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Notifications:
(after Council decision)

Name	Mailing or E-mail Address

Approvals:

*required

*Department

City Treasurer

General Manager

City Manager

To be completed by the Clerks Department	
Committee Disposition & Comments	
	01-Approved 02-Not Approved 03-Amended 04-Referred 06-Received & Filed 07-Withdrawn
Council Disposition & Comments	
	01-Approved 02-Not Approved 03-Amended 04-Referred 06-Received & Filed 07-Withdrawn

Appendix A: Practices in Other Municipalities

City Planning staff contacted comparable municipalities to gain a better understanding of other municipal planning departments' experience and planning processes, regarding the use of artificial grass in residential areas. Table A provides comments provided by neighbouring municipalities regarding artificial grass.

Table A: Municipal Practices and Comments		
Municipality	Definition of Landscaped Open Space Area	Interpretation and Comments
<p>City of Waterloo (Development Services Department)</p>	<p>i. The definition of "landscaped open space area" in the City's Zoning By-law reads as follows:</p> <p><i>"landscaped open space"</i> means that portion of a lot which is used for the growth and maintenance of grass, flowers, trees and shrubs and other landscaping including a surfaced walk, patio, pool or similar outdoor recreational amenity..."</p>	<p>i. Waterloo Development Services Staff agree that based on this definition, artificial grass could be interpreted as a "surfaced walk" or "similar outdoor recreational amenity;" and therefore, a form of landscaped open space.</p> <p>Many of the zones in Waterloo require a minimum of 30% landscaped open space and artificial grass could be considered to contribute to that 30%. However, through the Site Plan Approval process, staff do not support the use of artificial grass.</p> <p>Development Services expects to tighten up the definition of <i>"landscaped open space"</i>, through a comprehensive review of the Zoning By-law, to specifically exclude artificial grass.</p>
<p>City of St. Catharines (Planning Services Department)</p>	<p>i. The unconsolidated Zoning By-laws of the City require landscaped areas in residential front yards, but do not specifically prohibit the application of artificial grass.</p>	<p>i. The potential use of artificial grass has not come up in regards to residential front yard areas in the City.</p>
<p>City of Mississauga (Planning and Building Department)</p>	<p>i. Planning staff notes that the Zoning By-law 0225-2007 does not specifically identify (i.e. prohibit) the use of artificial grass in residential front yard areas.</p>	<p>i. Planning staff notes that the use of artificial grass is discouraged through site plan approval. However, this has not been a recurring issue.</p>

		<p>Planning staff notes that by-law enforcement has identified in the past some properties using artificial grass, contrary to an approved Site Plan. These properties were required to remove the artificial grass to be consistent with the approved Site Plan.</p>
<p>City of Hamilton (Planning Department)</p>	<p>i. In Hamilton only (this requirement does not apply to the outlying former municipalities), properties subject to Zoning By-law 6593 require that no less than 50% of the gross area of the front yard shall be used for “<i>landscaped area</i>”, excluding concrete, asphalt, gravel, pavers, or other similar materials.</p> <p>ii. Further, no part of a “<i>landscaped area</i>” shall be other than:</p> <p>(c) not less than 50% of which shall be natural earth comprised of the natural planting of grass lawns, trees, shrubs and flowers in such manner as to establish and enhance the beautification of the landscaped area and any building or structure on the same lot, and may include a planting strip.</p>	<p>i. Artificial grass is permitted under Zoning By-law 6593, subject to the “<i>landscaped area</i>” provisions noted.</p> <p>Artificial grass would not meet subparagraph (c), as it is not natural planting. If artificial grass comprises less than 50% of the minimum required 50% “<i>landscaped area</i>”, planning approvals (a minor variance to the definition of “<i>landscaped area</i>”) would not be required prior to the installation of artificial grass.</p> <p>ii. Planning staff notes that this would only apply to the front yard. The noted requirements are not applicable to the side and rear yards of residential areas.</p>

Appendix B: Burlington Staff Comments

City Planning staff were consulted in May 2010 for input into this proposal. Their comments are listed in Table B:

Table B: Burlington Staff Comments	
Category	Comments
Implementing Zoning By-law 2020	<ul style="list-style-type: none"> Regulating <i>Landscaped Open Space Areas</i> to include a specific artificial grass product/company within the Zoning By-law 2020 can be difficult to administer and enforce.
Artificial Grass Use on Private Residential Properties	<ul style="list-style-type: none"> For consistent appearance, residents potentially may want to install artificial grass on the boulevards in front of their property, as well as on other adjacent City properties. Artificial grass installed along curbs and sidewalks could be damaged by City, Regional and utility company operations. Owners of the artificial grass would not necessarily be compensated for this damage. As a solution, a 1-m natural buffer could be required between the curb and artificial grass cover. However, property owners would be required to maintain the buffer. Artificial grass is used by the Parks and Recreation Department only in specialized, high traffic situations. Additional financial and capacity issues may also include: (i) artificial grass is an expensive product to replace, (ii) it may be difficult to match the type of artificial grass products, and (iii) the replacement of artificial grass would require specialized installation skills.
Urban Design Principles	<ul style="list-style-type: none"> Holistically, the advertised consistent green appearance of artificial grass would not be in keeping with the climatic variability of Southern Ontario. Properties applying artificial grass in the winter season would stand out in contrast to the brown surroundings indicative of natural vegetation. Although the subject product can contribute to LEED accreditation, the appropriate use of natural self-sustaining vegetation and efficient landscaping practises (e.g. xeriscaping) in front yard areas can achieve a similar LEED objective.
Environmental Impacts	<ul style="list-style-type: none"> Artificial grass alters the natural balance of infiltration and storm water run-off (e.g. product base and soil compaction), potentially resulting in sheet flow and run-off issues from the site. In comparison, natural vegetation provides for the filtration of run-off and stores water longer.

<p>Environmental Impacts (cont'd)</p>	<ul style="list-style-type: none">• The composition of artificial grass has the potential to run off into adjacent hydrological systems (e.g. watercourses and wetlands) during the lifespan/breakdown of the product.• In comparison to artificial surfaces, natural vegetation reduces ambient temperatures through absorption and evapotranspiration processes, including carbon sequestering.• The urban heat island effect is a phenomenon whereby urban regions experience warmer temperatures than rural surroundings, due to the replacement of natural vegetation with artificial surfaces.• Artificial grass is incompatible with adjacent natural systems. For example, tree roots can extend from the trunk two to three times the distance of the drip line. Tree protection plans recognize safe distance to protect the trees, where artificial grass can inhibit the root growth of the trees and lead to other issues.• The use of artificial grasses negatively impacts already fragmented urban habitat and ecological processes.• The proposed product requires the removal of approximately 6 inches of top-soil, which is rich in nutrients and has a high quantity of microorganisms and organic matter.• Natural vegetation provides oxygen and cool air, pollution control and soil erosion protection.• Natural vegetation that provides direct and indirect habitat for urban wildlife (e.g. insect and bird populations) is replaced.• Artificial grass has a 10-15 year lifespan, which may create a burden on waste disposal infrastructure and services during required product replacement. In comparison, the appropriate selection and planting of natural species can be self-sustaining (e.g. drought-tolerant species).• The cumulative impact of the above issues is unevaluated.
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Appendix C: External Committee/Agency Comments

Planning staff circulated the proposal to the Sustainable Development Committee, the Region of Halton and Conservation Halton for comment. Comments are provided in Table C:

Table C: External Agency Comments	
Committee/ Agency	Comments
Sustainable Development Committee	The Sustainable Development Committee provided comments to Planning staff on February 25, 2011. The Committee's position is that the proposal is not in support of the proposed amendment to the Zoning By-law 2020, based on the principles and objectives of sustainable development developed by the Committee.
Region of Halton	The Region of Halton provided comments to Planning staff on July 23, 2010. The Region's position is that it is not in support of the proposed amendment to the Zoning By-law 2020, as the use of artificial grass would be inconsistent with the adopted Regional Council's sustainability vision for the Region of Halton. Also, from a sustainability standpoint, the inclusion of synthetic turf as part of landscaped areas in residential precincts would reduce natural areas and preclude ecological processes. While synthetic turf receives LEED accreditation, its use does not reflect the broader sustainable perspective. As the cumulative impact of synthetic turf in residential areas is not known at this time, and given the human health and ecological concerns, it is suggested that we employ the precautionary principle to the use of this product in residential areas.
Conservation Halton	Conservation Halton provided comments to Planning staff on December 7, 2010. Conservation Halton recommends that the proposal be investigated further to ensure that environmental impacts are thoroughly assessed. There is a general concern that, while isolated use of the product on a limited basis may not be problematic, widespread use could have detrimental impacts to the environment.

Appendix D: Public Comments

City Planning Staff held a Public Open House on January 26, 2011 to allow the public the opportunity to review and comment on the proposal to amend the Zoning By-law 2020 definition of *Landscaped Open Space Area* to permit artificial grass. 13 individuals attended the meeting, of which at least 3 individuals indicated associations with artificial grass providers.

Table D is a summary of the public comments received during the Public Open House, and in response to the advertisement circulated on January 14 and 21, 2011 requesting public input.

Table D: Public Comments	
Category	Comments
Positive Implications of Artificial Grass in Residential Front Yards	
Aesthetics	<p>Product has consistent visual stability and assists community's overall appearance.</p> <p>Excellent solution for hard to grow areas, such as mature tree lots.</p> <p>Current artificial grass products are more realistic in comparison to older products.</p> <p>Product is better landscape alternative to front yards using crushed aggregate screenings.</p> <p>Appropriate for balconies, condos, small front lawns and indoor environments.</p>
Environment	<p>Water conservation benefits.</p> <p>Elimination of carbon emissions from traditional lawn maintenance equipment.</p> <p>Assistance with drainage on the site.</p> <p>Reduced pesticide use.</p> <p>Products use recycled content.</p>
Maintenance	Product has fewer maintenance requirements.
Other	<p>Private property owners should have the right to select their preferred landscaping options.</p> <p>City properties have artificial grass.</p>
Negative Implications of Artificial Grass in Residential Front Yards	
Aesthetics	<p>The appearance of artificial grass is not appealing, as it contradicts the Garden City aspect of Burlington.</p> <p>Plastic grass must be fenced-in to prevent impacts from wandering animals.</p> <p>The product will start to fade, look grey, etc. as it ages.</p> <p>It may lead to the prevalence of artificial lawns in the City.</p>
Environment	The use of this product would negatively impact trees, urban wildlife and micro-organisms.

	<p>Additional waste from animal droppings which stay on the grass.</p> <p>The required aggregate base of the product puts added stress on a non-renewable resource.</p> <p>The use of the product contradicts sustainable development practices (sustainable gardening), which is what the City of Burlington is promoting.</p> <p>The product could contribute to global warming due to excess heating of artificial grass.</p> <p>The product's underpadding is highly flammable and toxic.</p> <p>Concerns about disposal and additional waste.</p> <p>Negative impacts on water cycle and stormwater runoff.</p> <p>City is destroying much of its green space for current build-out of housing and industrial/commercial use.</p> <p>Photosynthesis, oxygen production, heat absorption and air filtration would be negatively impacted.</p> <p>Until the industry data is stable, the product should not be permitted for public or private use in Burlington.</p> <p>We would be better off promoting green building initiatives and low-maintenance lawns.</p>
Other	<p>Health and fitness would be compromised as artificial grass would reduce the need to work actively outside.</p>