



STAFF REPORT ACTION REQUIRED

Shade Policy for the City of Toronto

Date:	September 4, 2007
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

Skin cancer resulting from overexposure to ultraviolet radiation (UVR), is the most common cancer in Ontario, representing one third of all new cancer cases. The treatment costs are considerable due to the sheer number of cases. For melanoma, the most serious form of skin cancer, treatment options are few; hence prevention is critical.

Reducing overall exposure to sunlight is the most important way to prevent skin cancer and the other health effects of UVR. The provision of natural and constructed shade combined with personal sun protection methods (hats, appropriate clothing, sunscreen) are important strategies for reducing exposure and protecting exposed skin when outdoors.

Children tend to be outdoors more than adults and overexposure to the carcinogenic effects of UVR during the early years of life is a major determinant of lifetime risk of skin cancer.

The past twelve months have seen both a growing momentum of activities by City divisions to encourage greening and green development standards and a stronger political commitment to a "Climate Change and Clean Air agenda". A series of shade related pilot projects and events have been completed by Toronto Public Health and the Toronto Cancer Prevention Coalition's Shade Policy Committee. The health and environmental benefits of shade, not only as a protective measure against skin cancer and other sun-related diseases, but as a means to encourage physical activity, reduce greenhouse gas and air pollutant emissions, mitigate the urban heat island effect, and reduce energy costs, are being recognized and acted upon.

The adoption by Toronto City Council of a policy to make the provision of shade, both natural and constructed, a key consideration in the planning and development of all municipally-owned and operated facilities will help to ensure an environmentally sustainable future and healthier City.

RECOMMENDATIONS

The Medical Officer of Health recommends that:

1. the Board of Health recommend that Toronto City Council endorse the following Policy Statement for Shade:

The provision of shade can be an effective means of reducing exposure to ultraviolet radiation (UVR) and its associated health risks such as skin cancer. Furthermore, the presence of shade can encourage physical activity, reduce greenhouse gas and air pollutant emissions, mitigate the urban heat island effect, and reduce energy costs.

The provision of shade, either natural or constructed, should be an essential element when planning for and developing new City facilities such as parks or public spaces, and in refurbishing existing City-owned and operated facilities and sites. Increasing shade in Toronto contributes to a healthier and more sustainable City.

2. the Board of Health request the Medical Officer of Health to direct the Shade Policy Committee to develop specific guidelines, by Summer 2008, to assist City agencies, boards, commissions and divisions to operationalize the Shade Policy.
3. the Board of Health request the Medical Officer of Health to forward this report to City Agencies, Boards, Commissions and Divisions.

Financial Impact

There are no financial impacts resulting from this report.

DECISION HISTORY

In October 2004, the Board of Health endorsed the shade policy and technical considerations for the City of Toronto, prepared by the Shade Policy Committee (Attachment 1) of the Toronto Cancer Prevention Coalition (TCPC), a multidisciplinary group whose members include Toronto Public Health, city staff from other relevant divisions and a broad group of external partners and key stakeholders. The Committee was formed in 2003 in response to a directive from Council:

http://www.toronto.ca/health/resources/tcpc/pdf/tcpc_shade_policy_transmittal.pdf

On May 4, 2005, an earlier draft shade policy developed by the TCPC was debated but not approved by Toronto City Council.

At its meeting on May 9, 2005, the Board of Health, in support of the shade policy, requested that the Medical Officer of Health continue to work with relevant divisions, community partners and school boards to identify and pilot strategies to increase shade in particular areas where children are most likely to be in attendance; and make recommendations to increase the provision of shade in Nathan Phillips Square to appropriate staff responsible for coordinating the Nathan Phillips Square redesign process. This report outlines progress on strategies to increase shade, and recommends the adoption of a policy on shade by City Council.

ISSUE BACKGROUND

The International Agency for Research on Cancer, a World Health Organization body, has determined that solar radiation, and more particularly the ultraviolet portion of solar radiation, is a human carcinogen for skin cancer.¹ Exposure to UVR also increases the risk of lip cancer, some types of eye melanoma and cataracts.² It can cause sunburn and premature skin aging and wrinkling. It can trigger skin reactions in those using "photosensitizing" substances, including a number of common medications, and it decreases the body's immune system. Despite the fact that many Canadians are at risk of vitamin D deficiency, particularly because of our northern latitude and reduced sun exposure, current guidelines recommend the addition of oral vitamin D supplements for adults over age 50, but do not encourage more UVR exposure.

According to the National Cancer Institute of Canada, both the incidence and mortality rates for melanoma are increasing³. In Ontario, an estimated 30,000 people will be diagnosed with skin cancer each year, about 2,000 of them with melanoma⁴. From 2002 to 2004, 238 Toronto residents died from skin cancers. Of this, 186 deaths were attributed to malignant melanoma⁵.

Health and environmental issues are inextricably linked, and the combined arguments for shade as integral to sustaining a healthy urban environment are persuasive. As such, considering shade in the design of public places is essential. There is a strong need for linking public health with city planning, urban design and approaches to the development and conservation of the urban forest.

Activities by the City of Toronto and External Partners that will Increase Shade

The following activities by City divisions and external partners over the past twelve months, along with City initiatives to combat climate change, will increase opportunities for shade in City venues:

- **Parks, Forestry and Recreation Shade Policy Provision Guidelines**

In 2006, Parks, Forestry and Recreation staff revised the 2004 Board of Health-approved shade policy to develop a divisional operational policy to guide its park design and development activities and tree planting initiatives. Parks, Forestry and Recreation's Senior Management Team approved the guidelines in early 2007 and they are now in effect. The General Manager of Parks, Forestry and Recreation submitted an information report on the division's shade policy guidelines to the April 10th, 2007 Parks and

Environment Committee, which was received by the Committee. The report is available at: <http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-2372.pdf>. The policy states that the Parks, Forestry and Recreation Division recognizes that shade (both natural and constructed) can be an effective way to reduce exposure to UVR by providing shade at its park sites and facilities where feasible. Parks, Forestry and Recreation's shade policy will assist in achieving both climate change goals and the Division's strategic plan goal of increasing the existing tree canopy.

- **The Toronto Green Development Standard**

Completed in June of 2006, *Making a Sustainable City Happen: The Toronto Green Development Standard* report presented "an integrated set of targets, principles, and practices to guide the development of City-owned facilities and to encourage green development amongst the private sector." In July 2006, City Council approved a set of recommendations stemming from this report whereby City-owned developments are required to meet the Green Development Standard. For private development, the Standard will remain voluntary in the short term, while further research is conducted and the Standard further refined.

This Standard is geared to providing comfortable and safe pedestrian environments, and requires provision of opportunities for shade in these areas. The Standard also emphasizes preservation and enhancement of the urban forest. Protection of existing trees is required, and tree coverage of up to 30% of the site's hardscape is encouraged.

Design guidelines for greening surface parking lots and adjacent pedestrian routes will be put forward to City Council this fall. Built shade for car and bicycle parking is also in development.

The Executive Environment Team is working to develop a strategy to implement the Green Development Standard for City-owned properties.

- **City's Climate Change and Clean Air Action Plan: *Change is in the Air***

City Council's green plan, *Change is in the Air* was unveiled in March 2007 and approved unanimously by City Council in July 2007. It is one of the most ambitious climate change plans in North America, and aims to cut greenhouse gases in the city by six per cent by 2012, 30 per cent by 2020 and 80 per cent by 2050. Among the plan's target is doubling the City's tree canopy by 2050, citing several important functions of trees: protecting the population from the sun, cooling the urban heat island and conserving energy, soaking up rain from severe storms, and filtering pollution from the air.

Activities by the Toronto Cancer Prevention Coalition Shade Policy Committee in Collaboration with Toronto Public Health to Increase or Promote Shade

In addition to the activities carried out by City divisions, between May 2005 and May 2007 the Shade Policy Committee in collaboration with Toronto Public Health emphasized the importance of shade on the public agenda. The argument for shade as an essential element of a healthy community was made through a series of events: the

implementation of two pilot projects, successful advocacy to achieve increased shade as part of the redesign of Nathan Phillips Square as directed by the Board of Health, and most recently, the Shade for Good Health and a Green City conference held on May 11, 2007.

- **Shade Audit of Two Toronto Parks Pilot Study**

In the summer of 2005, the Shade Policy Committee commissioned a report, “How to Conduct a Shade Audit”. The goal of this initiative was to develop an efficient and cost effective protocol to inform and assist the Medical Officer of Health and members of Council. The protocol was developed in collaboration with the Division of Parks, Forestry and Recreation. The auditing process considered aspects of tree inventory collection, usability analysis and shade projection at two parks: Charles G. Williams and Christie Pits. The method used for this audit was time-efficient and cost-effective with clearly defined parameters. The report is available at

http://www.toronto.ca/health/resources/tcpc/pdf/tcpc_shade_audit.pdf

- **Sail Shade Canopy in Dovercourt Park Pilot Study**

In May 2003, Dovercourt Park’s wading pool and playground areas were subject to the City’s first shade audit that revealed, during the highest UVR risk times of 11:00 a.m. to 4:00 p.m., the wading pool and playground areas were completely exposed with up to six to eight hours of constant sunlight each day throughout the summer. This prompted a collaboration between the Shade Policy Committee and Friends of Dovercourt Park to expedite the design of a shade canopy for the park, in consultation with Parks Supervisors and City Recreation staff. On October 1st, 2005, for the very first time, a test sail shade canopy from recycled sails was hoisted over the Dovercourt Park wading pool during the high UVR hours of 11:00 a.m. to 4:00 p.m, in order to increase shade in areas where children play. Measurements were taken to assess the impact of the sail shade. Photos available at http://www.toronto.ca/health/resources/tcpc/tcpc_media.htm

- **Nathan Phillips Square Redesign**

Successful advocacy by the Shade Policy Committee resulted in the requirement for shade to be embedded in the call for proposals to redesign Nathan Phillips Square. The winning proposal includes a ring of shade trees (an ‘urban forest’) around an open space for gathering and public events. Overall, the new design increases tree coverage by 30% overall, and by 60% around the perimeter. A wide variety of sustainable design achievements linked to Toronto’s Green Development Standard will also be implemented.

- **Shade for Good Health and a Green City Conference – May 11, 2007, Toronto**

On May 11, 2007 the Shade Policy Committee of the UVR Working Group held a day-long session, Shade for Good Health and a Green City, to reinforce the importance of a shade policy. Ninety participants from over fifty organizations throughout Ontario attended and many areas of interest were covered:

- The risks of ultraviolet radiation in relation to skin cancer;
- Current policies, standards and guidelines relating to shade;
- The importance of the urban forest, and strategies for protecting and caring for it;

- Shade initiatives in schools and other community settings;
- Current thinking and developments in designing natural and constructed shade.

‘Everything is connected’ emerged as the central theme and organizing principle of the proceedings. While each speaker put a specific, expert lens on their subject, together they created a common focus and a powerful argument for shade as an essential element of a healthy community. Whether the presentation focused on promoting outdoor activity and preventing skin cancer, combating environmental pollution of air and water, cooling the urban heat island and preventing heat-related illness and death, or improving City aesthetics and tourism, the importance of shade to overall personal, family, and community health was evident. The conference report is available at www.toronto.ca/health/resources/tcpc/shade_2007.htm

COMMENTS

Skin cancer is a largely preventable disease related to exposure to solar UVR throughout the year and in particular during the summer months. In addition to skin cancer, overexposure to UVR has been linked to a number of other health problems.

As the ozone layer has become thinner, the population is less protected from the effects of sun exposure. Southern Ontario has the strongest UVR in Canada. Sun protection is needed from spring through fall, especially from 11:00 a.m. to 4:00 p.m.

Provision of natural and constructed shade at publicly owned and municipally operated facilities and sites, particularly those where children may be at risk such as childcare centres, wading pools, splash pads and summer camps, is essential to reducing exposure to UVR. The physical qualities of outdoor environments are important contributors to healthy behaviours and have been associated with increased physical activity in children⁶

Shade is also important along pedestrian and bicycle paths, public squares and other public spaces. One of the principal means of providing shade in public places is through the planting and nurturing of trees. Trees can be planted and with appropriate care can provide significant and long term benefits to the health of a community. More trees mean more protection from UVR. Trees with dense, wide canopies and low foliage create the most shade and shield humans from overexposure to UVR and the resulting risk of skin cancer. In order to be most effective, trees should be planted to provide coverage where people of all ages, especially children, congregate.

In addition to shade, trees provide many other tangible and intangible social, economic and environmental benefits. From an environmental perspective, urban trees effectively remove carbon dioxide, the most common greenhouse gas, from our atmosphere. Trees also help to reduce smog and poor urban air quality, which result in 1700 premature deaths and 6,000 hospitalizations per year in Toronto.⁷

With respect to constructed shade, the key is to make sure the right structure is in the right place, and that it accommodates changing sun angles and heat conditions. New technologies – for example, structures that fold or move – make it possible to vary the

interaction of the structure and the user for the most effective protection from sun as well as inclement weather.

Next Steps

The accomplishments of the past two years and the City's commitment to an environmentally sustainable future provide an excellent opportunity to adopt and implement a corporate-wide shade policy. An articulated commitment to increase shade can help ensure that intentions such as the decision to double the existing tree canopy to 34%, part of the Climate Change and Clean Air Action Plan, are fulfilled.

Effective public health policy for UVR protection includes working with the pertinent City divisions and partners to develop corporate shade policy guidelines to implement the shade policy statement. The guidelines will include a comprehensive list of options that can be implemented in new or refurbished city venues to increase shade for an environmentally sustainable, healthy city.

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SIGNATURE

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ATTACHMENT

Attachment 1: Members of the Shade Policy Committee
References:

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- ¹ International Agency for Research in Cancer, 1992
- ² Mills CJ, Trouton K, Gibbons L. (1997). Second symposium on ultraviolet radiation-related diseases. *Chronic Disease Canada*, 18:27-38
- Vajdic, CM., Kricker, A., Giblin, M. et al. (2002). Sun exposure predicts risk of ocular melanoma in Australia. *International Journal of Cancer*, 101:175-82
- ³ Canadian Cancer Statistics, 2006
- ⁴ Cancer Care Ontario Fact Sheet, June 2005
- ⁵ Ministry of Health and Long Term Care, Provincial Health Planning Database, 2004
- ⁶ Boldermann C, Blennow M, Dal H et al. (2006) Impact of preschool environment upon children's physical activity and sun exposure. *Preventive Medicine*, 42:301-8
- ⁷ Toronto Public Health, July 2004

Attachment 1
Members of the Shade Policy Committee

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