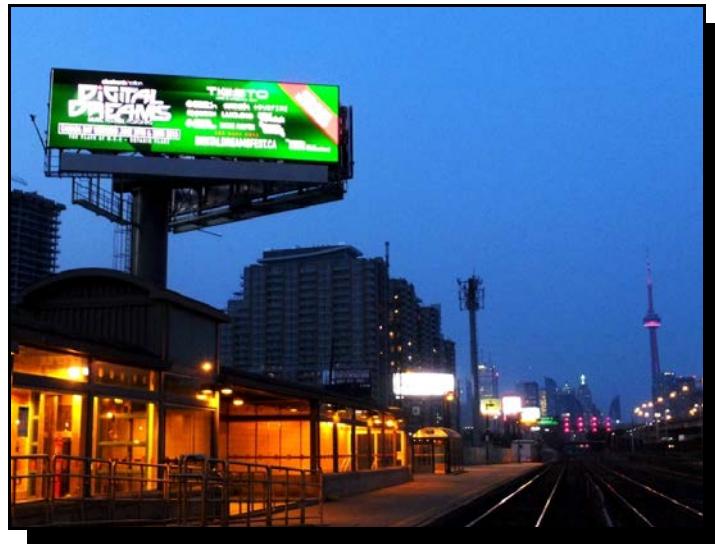


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# Planning & Design Review of Illuminated & Electronic Signs



Martin Rendl Associates

July 2013

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## **EXECUTIVE SUMMARY**

City of Toronto Council in 2010 passed a new Sign By-law for the City of Toronto (Municipal Code, Chapter 694). It contains regulations governing the location of various types of electronic signs across Toronto. The Sign By-law also establishes illumination controls for all types of signs including signs in residential areas.

This study reviews issues related to illuminated and electronic signs that have arisen since 2010. A series of recommendations deal with measures and potential revisions to the Sign By-law related to electronic sign matters and illuminated signs in residential areas.

## **RECOMMENDATIONS**

### **1. Illuminated Signs**

- a) Revise the maximum illumination level for signs to 300 nits between sunset and sunrise.
- b) Revise the maximum level for light trespass to 3.0 lux above ambient light levels when measured at a distance of 10 metres from the illuminated sign.

### **2. Electronic Sign in Street Furniture**

- a) Apply the following requirements in the City's street furniture agreement for any electronic sign installed in a transit shelter:
  - (i) Display only electronic static copy with an 8 to 10 second message duration, 1.0 second transition with no visible effects;
  - (ii) Maximum illumination from sunset to sunrise equivalent to the illumination of non-electronic advertising signs in the transit shelter or 3.0 lux above ambient light conditions, whichever is less;

### **3. Electronic Message Centre Sign (Readograph Copy)**

- (a) Permit electronic message centre signs (signs containing readograph copy that is changed electronically) only on signs associated with schools, places of worship, libraries, community centres, nursing homes and hospitals when located in a Residential Sign District.
- (b) Set a 20 minute minimum message display time for readograph copy.
- (c) Prohibit the display of any visible effects during the message transition including motion, fading or flashing.
- (d) Prohibit the illumination of an electronic message centre between 9:00 p.m. and 7:00 a.m.

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#### **4. Projected Image Sign**

Projected image signs be limited to first party signs where approved through a Signage Master Plan or by a special event permit issued by the City of Toronto.

#### **5. Electronic Static Copy Sign**

- (a) Permit first party signs to display electronic static copy in a Commercial (C) Sign District and an Employment (E) Sign District subject to:
  - (i) The maximum sign area for static electronic copy be:
    - 30% of a wall sign up to a maximum of 3.0 square metres;
    - 50% of a ground sign up to a maximum of 5.0 square metres;
  - (ii) The static electronic copy be displayed for a minimum of 20 minutes;
  - (iii) A maximum message transition of 1.0 second with no display of visual effects during the message transition including motion, fading or flashing;
  - (iv) Located a minimum of 60 metres from an intersection;
  - (v) Located a minimum of 60 metres from a residential sign district or dwelling unit;
  - (vi) Located a minimum of 300 metres from any other electronic copy sign.
- (b) Permit third party signs to display static electronic copy in a Commercial (C) Sign District, an Employment (E) Sign District, and a Utility (U) Sign District subject to:
  - (i) The sign is located a minimum of 60 metres from an intersection;
  - (ii) The sign is located a minimum of 60 metres from an R, RA, CR, I, or OS Sign District;
  - (iii) The sign's electronic copy does not face any open space, institutional or residential premise that is located within 250 metres radius of the sign;
  - (iv) The sign is located a minimum of 500 metres from any third party sign containing electronic copy;
  - (v) The sign is located a minimum of 150 metres from any third party advertising sign that does not display electronic copy

#### **6. Electronic Moving Copy Sign**

Retain the current regulations governing electronic moving copy signs and include the requirement that the signs be subject to a signage master plan, where permitted.

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## **ACKNOWLEDGMENT**

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## 1.0 INTRODUCTION AND PURPOSE

Electronic signs are increasingly being located on buildings and property in Toronto.

Alongside this, City Council earlier in 2013 considered a proposal to incorporate electronic signs and displays into transit shelters. They are one element of Toronto's Street Furniture program along with litter receptacles, benches, and information columns.

The growth of electronic signs is a trend in signage driven by the adoption of new electronic display technologies and products by sign companies.

This trend also marks a new direction in the kinds of signs seen across the City. It introduces a new factor potentially affecting the visual character of areas in the City.

Toronto City Council in July 2012 directed staff to study the impact of signs containing electronic sign copy and report back to City Council. In February 28, 2013, the Planning and Growth Management Committee requested staff to report on the impact of illuminated signs on the quality of life in residential areas and recommendations for illuminated signs in residential areas.

The purpose of this study is to review:

- The potential opportunities for the location of these electronic signs as well as analyze their potential impacts on the public realm;
- The impact of illuminated signs on the quality of life in residential areas.

This study and other related work on electronic signs will contribute to the development of new regulations for electronic signs in the City of Toronto Sign By-law. This work will also inform how electronic signs and displays could be incorporated in transit shelters in the City of Toronto's Street Furniture program.



Air Canada Centre and Maple Leaf Square

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## **2.0     WHAT IS AN ELECTRONIC SIGN ?**

The term electronic sign as used in this report, refers to a sign that uses electronic hardware and software to display its copy, messages or images. This is in contrast to traditional non-electronic signs where the copy displayed is physically applied to the sign surface by printing, painting or otherwise attaching it onto the sign. The material or substrate to which the copy is applied is typically paper, wood, plastic or the wall of a building.

Electronic signs can be grouped into three categories: electronic message centres, digital signs, and projected image signs.

### **2.1     Electronic Message Centre**

These are sometimes also referred to as readograph signs and are the oldest example of an electronic sign with changeable copy.

Electronic message centres often replace the manually changeable copy portion of signs. The software controlling what is displayed can generate visual effects such as scrolling messages, moving patterns, flashes, and varying brightness.

The benefit of an electronic message centre is it enables the sign owner to easily change the basic information displayed on the sign. These message changes can be controlled from a remote location providing the owner with greater versatility and flexibility in the management of the sign.

The simplest example of this type of electronic sign consists of a matrix display of LEDs (Light Emitting Diodes) controlled by software which forms words, numbers, or simple graphics. The display is generally one colour (red, amber, white LEDs) and low resolution due to the coarse pixel pitch of the LED display matrix. A tighter pixel pitch results in higher resolution and a clearer sign.



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These types of electronic displays first found use as time and temperature signs. LED displays allowed for the changes in the time and temperature numbers to be electronically linked directly to the sign and automatically displayed.

While LED readograph boards are the most common hardware used in electronic message centres, higher resolution digital displays are also used. The higher technical capability of these types of displays provides the sign owner with more opportunities for the type and quality of sign copy displayed.



Time & Temperature Board



LED Electronic Message Centre in a Ground Sign

Electronic message centres are most commonly implemented as one part of a permanent sign such as a ground sign, however they can be the entire sign where appropriate or permitted.

Electronic message signs are also used in freeway traffic management. The changeable message signs used by the Ministry of Transportation (MTO) in the Highway 401 COMPASS system in Toronto use amber LEDs linked to a central MTO operations centre to provide information and updates to motorists.

Messages displayed on these freeway signs include advice on adverse traffic conditions ahead, information on diversions, the distance to upcoming exits, and other traffic related messages for drivers.



MTO COMPASS Sign

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## 2.2 Digital Signs

The sign industry uses the term digital sign with reference to an electronic sign that consists entirely of a high definition electronic display. As with all electronic signs, the hardware displaying the sign's copy or content is operated by software located on-site or from a remote operations centre located off-site.

Digital signs share the same LCD, LED or plasma screen technologies as domestic flat screen televisions and computer monitors. Accordingly, this type of sign can display the identical programming and digital content in high definition and millions of colours.

The content or creative copy displayed on a digital sign is fully changeable. It can be displayed in a static manner as a sequence of individual slides displayed for a fixed interval as in a slide show. Alternatively, the copy can be displayed dynamically with full motion or animation in the form of a short commercial or video.

Most municipalities only permit third party advertising sign or billboards to be digital signs, not first party signs.

The Outdoor Advertising Association of America commits in its Code of Industry Principles that messages “on standard-size digital billboards will be static messages and the content shall not include animated, flashing, scrolling, intermittent or full motion video elements (outside established entertainment areas).” Most of the digital billboards in major cities display only static images that change at different intervals.

The brightness of the sign copy on digital signs can be set within specific limits and can be adjusted based on the time of day or night as well as ambient light conditions such as a cloudy day or bright sunlight.

The steady decline in hardware costs combined with higher quality displays are two factors that have supported the growth in the use of digital displays in signs in recent years.



Digital Sign  
Front Street at John Street

The growth of digital signs can be seen in various indoor and outdoor applications across Toronto.

Examples of interior digital signs include flight information in airport terminals, menu boards in restaurants and in store advertising, building directories, public information signs, and way finding signs.



Arrivals Board in Airport Terminal



Restaurant Menu Panel



Interior Advertising

The most common current outdoor uses of digital signs are the billboards operated by the major out of home advertising companies such as Astral Out-of-Home, Pattison Outdoor, and CBS Outdoor.

These digital signs are either new installations or replacements of previous traditional billboards.

Billboards tend to be the largest and highest signs in Toronto. They are usually located along highly traveled corridors at highly visible locations. These locations rely on high volumes of pass-by traffic to maximize the potential that the advertising on the billboard will be seen by as many persons as possible.



Digital Billboard

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In Toronto, digital billboards tend to be concentrated along the Gardiner Expressway, around Dundas Square and in other locations in the Downtown. Digital billboards are less common outside the Downtown.



Dundas Square



Digital Billboard Along Gardiner Expressway

First party digital signs in Toronto are generally limited to major sports and cultural venues or tourist destinations like the Air Canada Centre, Roy Thomson Hall and the CN Tower. There are also several digital signs in the Downtown associated with major office buildings. Some of these digital signs also display third party advertising.



Roy Thomson Hall  
King & Simcoe Streets



First Canadian Place  
King & Bay Streets

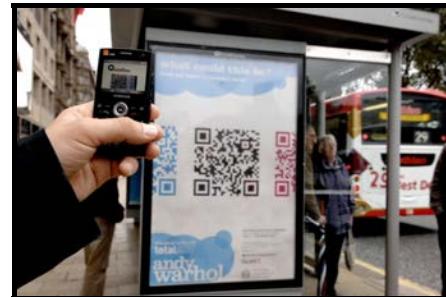


Bay Street Digital Ground Sign

## Interactivity

Smartphones give their users the capability for real-time interactions with digital media including signs. This mobile technology gives digital signs expanded possibilities for advertisers to connect consumers with their brand and marketing campaigns at street level.

For example, QR codes increasingly appear in advertising displayed in public places. When the QR code is scanned by a smartphone, the consumer receives additional information or is connected to the advertiser's website. Some street furniture programs incorporate touch sensitive screens which support full interactivity with a user, similar to the user interface of computer tablets.



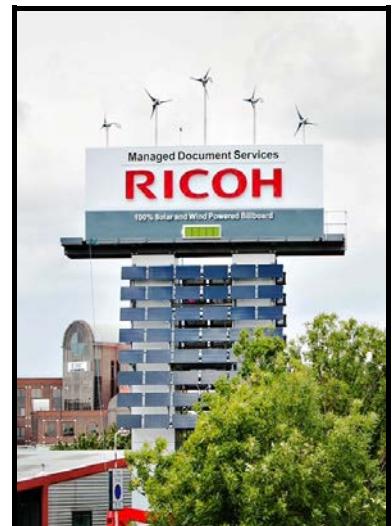
QR Code in Bus Shelter Ad



Touch Screen Display

### Sustainability

Large scale digital signs that focus on sustainability have started to appear in the marketplace. Since 2010, Ricoh has installed electronic signs that are 100% solar powered in New York's Times Square and in Sydney. The Ricoh Eco Board in London is powered by a mix of wind and solar power.



Ricoh Eco Board, London

### Place Making & Branding

Some cities have designated specific areas where signage is deliberately encouraged to be a dominant factor in place making, branding, and setting the area's visual character. Electronic signs are seen as key elements contributing to the look and vibrancy of these areas as well as complementing the uses and activities in the areas.

Dundas Square is a local Toronto example of such a special sign district. Times Square in New York and LA Live in Los Angeles are two other examples.



Times Square, New York City



LA Live, Los Angeles

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## 2.3 Projected Image Sign

A projected image or projection sign is text or other content that is projected onto a surface by a projector. The surface on which the projected copy or image is displayed is typically a building wall, the ground, floor, street or sidewalk.

The Toronto Sign By-law does not permit sign copy to be projected onto any surface.

Projected image signs are not widely used, likely because of their inherent operational and logistical limitations.

Since their visibility depends on darkness or low light, they generally are not used outdoors during the day. Large projected image signs need to have the projector located a large distance away on a property not associated with the property where the image sign is displayed. Obtaining permission from several property owners to locate the projector and use a building for the sign may not always be possible.

Laser projectors can project images either onto a surface or display the image as a light show in open space. The American Airlines logo appears to float in mid air over Los Angeles in the example on the right.



Projected Image Sign



Projected Image Sign

Projected images in outdoor settings are often part of a larger cultural or artistic event that runs for a limited period of time. In Toronto, such images can be excluded from the scope of the Sign By-law when associated with a special event or function which has been granted approval by the City's Economic Development and Culture Division.

Vivid Sydney is a good example of such an special event. During this 18 day event, Sydney Australia becomes a canvas for creative light installations and projections.

The Sydney Opera House becomes a spectacular projection screen for graphics and laser light shows. These light installations in Sydney and elsewhere, are often linked with musical or other performances.



Sydney Opera House During Vivid Sydney

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These examples from cultural events and non-commercial artistic installations illustrate the potential to use the same display technology for projected image signs and advertising.

Generally, these kinds of advertising signs are not permanent installations. They are used for short term visual and marketing impact. Accordingly, projected image signs in advertising usually advertise the launch of a new product or mark a unique event like the Olympics or other milestone events.

For example, in 2011 for the 125<sup>th</sup> anniversary of Coca Cola, Coke's head office in Atlanta was draped on all four sides with a white material to function as a screen onto which images and videos were projected at night.



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### 3.0 POTENTIAL IMPACTS OF ELECTRONIC SIGNS

The arrival of electronic signs in cities has initiated discussion about their suitability for different areas of a community. The potential impact of electronic signs on their surroundings and the public realm has also been part of these discussions.

This interest in electronic signs in cities is partly due to the fact that they are a new type of sign being introduced into communities. It also arises from the acknowledgment that the electronic display technology - the hardware - used in these signs creates potential issues of impact and visual character that are not present in or different from those associated with the traditional non-electronic signs in cities.

In this regard, when municipalities have updated their sign regulations to deal explicitly with electronic signs, one or more of these issues have arisen:

- Identifying appropriate locations to place electronic signs;
- Determining what types of signs can be electronic signs;
- Addressing sign brightness and glare in relation to the sign's surroundings, other illuminated signs, the night sky and light pollution;
- Avoiding light trespass and overspill of the sign's illumination onto nearby properties and sensitive uses;
- Setting times when electronic signs should be turned on or off;
- Assessing the impact of electronic signs on views, the look, character and quality of the public realm;
- Distraction for drivers created by the sign and changing messages.



Glare and Light Trespass  
from Electronic Sign

Municipalities use various controls to mitigate the impacts of electronic signs in their communities. Methods used by municipalities in their sign regulations include:

- Limiting the location of signs to specific areas or land uses;
- Limiting the number or type of electronic signs;
- Setting minimum separation distances between electronic signs and sensitive land uses such as residential, open space, institutional;
- Setting minimum separation distances between electronic signs and other electronic signs;
- Setting times when electronic signs must be turned off or not display any copy, i.e., go dark;

- 
- Controlling whether the copy displayed is static or dynamic;
  - Controlling the time interval between changes in the sign's copy;
  - Setting maximum luminance levels for the sign's brightness, including different levels for day and night or types of land use; and,
  - Setting maximum illuminance levels for the sign's surroundings associated with the light emitted by the electronic sign.

The extent to which municipalities use any of these methods varies as does how the particular method is implemented in each community. This is to be expected since the priorities and expectations on sign related issues vary with each community.

#### **4.0 JURISDICTIONAL COMPARISON**

A comparative context for Toronto is found in how other municipal jurisdictions have addressed the impacts of illuminated and electronic signs (a) when they are a sign located on a building or private property, and (b) when they are an element of street furniture.

##### **4.1 Electronic Signs**

The arrival of electronic signs in communities has led many cities to assess electronic signs and adopt regulations in their sign by-laws to address their use.

A scan of other major cities provides an overview of the approaches taken to regulate electronic signs that are located on buildings and private property. The regulations adopted address the impact of electronic signs by dealing with three areas: (a) location controls, (b) brightness, and, (c) display characteristics.

For the majority of municipalities, electronic signs consist primarily of electronic message boards in first party signs and digital billboards with third party advertising. Outside of electronic message boards, very few municipalities allow a first party sign to be an electronic sign consisting of a digital display.

Municipalities generally limit electronic signs to specific land use zones (e.g., commercial, industrial) and/or specific parts of the city (e.g., entertainment districts, downtown locations).

As with most types of commercial signs, electronic signs (except for electronic message centres) are not permitted in residential areas. Additional controls such as minimum distance separations from residential areas or residential dwelling units address the impact of electronic signs on residential uses. Some cities apply additional restrictions between electronic signs and sensitive uses such as parks, open space and institutional uses.

Table 1 contains a summary of the areas and land use districts where electronic signs are permitted. Generally, they tend to be located in commercial or industrial areas, or in special districts within a downtown.

<b>Table 1: Areas Where Electronic Signs are Permitted</b>	
<b>Toronto</b>	<ul style="list-style-type: none"><li>• Limited to Dundas Square Special Sign District and Gardiner Gateway Special Sign District</li><li>• Other locations have been approved as individual amendments to the sign by-law</li></ul>
<b>Ottawa</b>	<ul style="list-style-type: none"><li>• Commercial and industrial zones</li></ul>
<b>Winnipeg</b>	<ul style="list-style-type: none"><li>• Commercial and industrial zones</li></ul>
<b>Saskatoon</b>	<ul style="list-style-type: none"><li>• Commercial and industrial zones</li></ul>
<b>Edmonton</b>	<ul style="list-style-type: none"><li>• Discretionary use in most commercial and industrial districts</li></ul>
<b>Calgary</b>	<ul style="list-style-type: none"><li>• Discretionary use in most commercial and industrial districts</li></ul>
<b>Vancouver</b>	<ul style="list-style-type: none"><li>• Limited to an area on Granville Street</li><li>• Majority of existing electronic signs are digital billboards located on lands outside the city's jurisdiction to regulate (i.e., First Nations, Federal or Provincial lands)</li></ul>

In Calgary and Edmonton, electronic signs are a discretionary or conditional use. They are approved by a development permit in compliance with a land use or zoning by-law.

The development permit system is a flexible approval process that gives these Alberta municipalities greater discretion about where electronic signs are located and how they operate. It allows an application for the proposed sign to be evaluated within the context of its surroundings along with consideration of specific circumstances that are relevant to the approval of the electronic sign including imposition of conditions to mitigate specific impacts.

This discretion is exercised by municipal staff in their review and approval of the application for an electronic sign. The application of discretion is done by staff and does not require the review or approval of a municipal council or other committee.

The City of Toronto Sign By-law is a by-law passed under Section 8(2) of the City of Toronto Act. The application of discretion regarding signs in Toronto is exercised: (a) through delegation of the authority to grant variances to staff and the Sign Variance Committee, under certain conditions; (b) by City Council through the by-law amendment process as outlined in procedures established by the by-law; and, (c) through the Signage Master Plan provisions of the Sign By-law which provide a method for varying the sign regulations for a specific context or type of development.

Table 2 outlines the types of specific restrictions on electronic signs. These generally relate to spacing between signs and setbacks from traffic intersections or sensitive land uses such as public parks and residential areas.

<b>Table 2: Location Restrictions for Electronic Signs</b>	
<b>Toronto</b>	<ul style="list-style-type: none"> <li>Permitted in Dundas Square Special Sign District and Gardiner Gateway Special Sign District</li> <li>Other locations approved individually as amendments to sign by-law</li> </ul>
<b>Ottawa</b>	<ul style="list-style-type: none"> <li>100 m setback from street intersection</li> <li>300 m setback from other digital billboards, parks, open space, environmental protection zones</li> <li>150 m setback from a billboard sign</li> <li>300 m setback from each vertical edge and 30 m radius setback from: properties zoned residential, institutional; designated heritage properties, Parliamentary Precinct, Confederation Square, Rideau Canal</li> <li>500 m setback from listed major roadways and designated village</li> <li>15 m setback from a ground sign</li> </ul>
<b>Winnipeg</b>	<ul style="list-style-type: none"> <li>100 m setback from pedestrian crosswalk or traffic signals</li> <li>Cannot face an adjacent residential use unless it is not visible from the residential use</li> <li>Minimum 250 m separation from public park</li> <li>Minimum 150 m separation from an historic building or hospital</li> <li>Minimum 500 m separation from any other billboard on the same street facing the same direction of traffic</li> </ul>
<b>Saskatoon</b>	<ul style="list-style-type: none"> <li>Minimum 15 m from a residential zone</li> <li>200 m from another billboard facing the same direction on the street</li> </ul>
<b>Edmonton</b>	<ul style="list-style-type: none"> <li>Cannot be located to obscure a driver decision point</li> <li>Located so illumination does not project onto any surrounding residential premises</li> <li>Cannot be located facing a residential use</li> <li>Minimum separation between electronic signs and billboards varies from 100 m to 323 m depending on size of electronic sign</li> </ul>

**Table 2: Location Restrictions for Electronic Signs**

<b>Calgary</b>	<ul style="list-style-type: none"><li>• Prohibited if sign copy is visible from 42 listed streets</li><li>• Prohibited if within 450 metres of natural areas, listed major parks, escarpments and riverbanks</li><li>• Prohibited on a utility right-of-way</li><li>• Prohibited if electronic sign is visible from a building containing a dwelling unit and the electronic sign is located less than 125 metres from a building containing a dwelling unit</li><li>• Located a minimum of 30 m from an intersection</li><li>• Located a minimum of 30 m from a freestanding sign facing the same oncoming traffic</li><li>• Located a minimum of 300 m from any other electronic sign facing the same oncoming traffic</li><li>• Located a minimum of 75 m from any third party advertising sign facing the same oncoming traffic and no more than two third party advertising signs within 225 m radius</li><li>• Setbacks from street line increase as posted speed limit increases</li><li>• Development permit issued for period not exceeding three years</li><li>• Must be removed upon the expiry of its development permit if a development permit is approved for a freestanding sign within 30 m</li></ul>
<b>Seattle</b>	<ul style="list-style-type: none"><li>• Minimum 35 feet from any other sign using video</li><li>• If located 50 feet of a lot in a residential zone, video display is to be oriented so no portion is visible from a principal structure on that lot</li></ul>
<b>Phoenix</b>	<ul style="list-style-type: none"><li>• Minimum 100 feet setback from another sign, traffic lights or crosswalk</li><li>• Minimum 100 feet setback from a residential zone</li></ul>
<b>San Antonio</b>	<ul style="list-style-type: none"><li>• Minimum 2,000 feet from another sign on the same side of the road</li></ul>
<b>Atlanta</b>	<ul style="list-style-type: none"><li>• For a changing sign, minimum 5,000 feet from another changing sign on the same side of the road if visible, or on a highway</li></ul>
<b>Boston</b>	<ul style="list-style-type: none"><li>• Minimum 150 feet setback from a residential zone</li></ul>

Table 3 summarizes the controls placed on electronic signs with respect to static or animated copy, the manner in which images change, and other parameters related to the image or copy displayed on the sign.

<b>Table 3: Restrictions on Type of Display</b>	
<b>Toronto</b>	<ul style="list-style-type: none"> <li>• Minimum 10 second dwell time</li> <li>• Maximum 1 second transition</li> <li>• No transition effects</li> </ul>
<b>Ottawa</b>	<ul style="list-style-type: none"> <li>• Minimum dwell time of 10 seconds for any image</li> <li>• No use of animation, video, movement, flashing effects, odours, gases, pyrotechnics or interactive devices</li> <li>• Maximum one second transition time between images with no transition effects</li> <li>• No display of sequential images or messages that form one continuous advertisement on the same sign or more than one sign in a row</li> </ul>
<b>Winnipeg</b>	<ul style="list-style-type: none"> <li>• Static images only</li> <li>• Minimum 6 second dwell time</li> <li>• Maximum 0.25 seconds transition time</li> <li>• Electronic message centre: minimum 60 seconds dwell time in residential zone</li> </ul>
<b>Regina</b>	<ul style="list-style-type: none"> <li>• Animation and illumination permitted on all signs in all zones</li> <li>• Illumination is to be directed away from any adjacent residential premise</li> <li>• No illumination shall impede vehicular traffic or interfere with traffic signals</li> </ul>
<b>Saskatoon</b>	<ul style="list-style-type: none"> <li>• Minimum 6 second dwell time</li> </ul>
<b>Edmonton</b>	<ul style="list-style-type: none"> <li>• Minimum 6 second dwell time</li> <li>• Minor digital sign: static images only</li> <li>• Major digital sign (up to 12 square metres): moving effects and video permitted</li> </ul>
<b>Calgary</b>	<ul style="list-style-type: none"> <li>• Static copy only, no full motion video</li> <li>• Minimum 6 second dwell time for any image</li> <li>• Maximum 0.25 second transition between images</li> <li>• No visible effects in transition</li> <li>• No display of copy as sequential messages on a single sign or multiple signs</li> </ul>

**Table 3: Restrictions on Type of Display**

<b>Seattle</b>	<ul style="list-style-type: none"><li>• Minimum 20 seconds of a still image or blank screen after every video message</li><li>• Maximum 2 second transition time</li></ul>
<b>Phoenix</b>	<ul style="list-style-type: none"><li>• Minimum 8 second dwell time</li></ul>
<b>San Antonio</b>	<ul style="list-style-type: none"><li>• Minimum 10 second dwell time</li><li>• Maximum 1 second transition time</li></ul>
<b>Atlanta</b>	<ul style="list-style-type: none"><li>• Minimum 10 second dwell time</li><li>• Maximum 2 second transition time</li></ul>

Sign brightness and its impact on surrounding uses is a key issue with illuminated and electronic signs. Table 4 contains an overview of the kinds of illumination regulations major cities apply to electronic signs.

**Table 4: Restrictions on Illumination of Electronic Signs**

<b>Toronto</b>	<ul style="list-style-type: none"><li>• No sign can be illuminated between 11 p.m. and 7 a.m. unless located in Special Sign Districts where electronic signs are permitted</li><li>• Maximum luminance 5,000 nits between sunrise and sunset</li><li>• Maximum luminance 500 nits between sunset and sunrise</li><li>• Luminance of sign shall not increase light levels within 10 metres of all points of the electronic sign face by more than 6.5 lux above the ambient light level</li><li>• Light from sign cannot project onto any adjacent premises located in a residential, residential-commercial, or open space sign district</li></ul>
<b>Ottawa</b>	<ul style="list-style-type: none"><li>• Maximum 6,000 cd/m<sup>2</sup> between sunrise and sunset</li><li>• Maximum 220 cd/m<sup>2</sup> between sunset and sunrise</li><li>• Brightness level cannot be more than 0.3 foot candles above ambient light conditions</li></ul>
<b>Winnipeg</b>	<ul style="list-style-type: none"><li>• Maximum brightness level of 0.3 foot candles above ambient light conditions</li></ul>
<b>Edmonton</b>	<ul style="list-style-type: none"><li>• Maximum 400 nits between sunset and sunrise</li><li>• Sign brightness cannot exceed 0.3 foot candles above ambient light conditions between sunset and sunrise</li><li>• Signs abutting natural areas or public parks shall be de-energized between 12:00 a.m. and 5:00 a.m.</li></ul>

**Table 4: Restrictions on Illumination of Electronic Signs**

<b>Calgary</b>	<ul style="list-style-type: none"><li>• Maximum 7,500 nits between sunrise and sunset</li><li>• Maximum from sunset to sunrise: 500 nits in industrial districts, 350 nits in mixed use districts, 300 nits in all other land use districts</li><li>• Electronic sign cannot increase the light levels adjacent to the electronic sign by more than 3.0 lux above the ambient light level</li></ul>
<b>Surrey</b>	<ul style="list-style-type: none"><li>• Maximum 280 nits between sunset and sunrise</li></ul>
<b>Vancouver</b>	<ul style="list-style-type: none"><li>• Limited to an area on Granville Street</li><li>• Majority of existing electronic signs are digital billboards located on lands outside the city's jurisdiction (i.e., First Nations, Federal or Provincial lands)</li></ul>
<b>Seattle</b>	<ul style="list-style-type: none"><li>• Maximum 500 nits from dusk to dawn</li></ul>
<b>Phoenix</b>	<ul style="list-style-type: none"><li>• Maximum 300 nits from dusk to dawn</li></ul>
<b>Boston</b>	<ul style="list-style-type: none"><li>• Maximum 500 cd/m<sup>2</sup> at night</li><li>• Electronic signs can only operate between 7:00 a.m. and 2:00 a.m.</li></ul>

The illumination controls in Table 4 address one or more of the following aspects of the illumination of an electronic sign:

- Maximum luminance (the amount of light leaving the source i.e., emitted by the light source) measured in candelas per square metre (cd/m<sup>2</sup>) or nits (1 nit = 1 candela per square metre);
- Maximum illuminance (the amount of light falling on a surface such as the ground) measured in footcandles or lux (1 footcandle = 10.7 lux, 1 lux = 0.09 footcandles).

The light emitted by a typical desktop computer monitor is between 50 to 300 nits.

The outdoor light level on a clear day is approximately 10,000 lux while night under a full moon is approximately 0.1 lux. Indoor light levels can range from 500 to 1,000 lux or more depending on the activity.

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## 4.2 Street Furniture

Astral Out-of-Home (Astral) has a 20 year contract with the City of Toronto to provide signage on street furniture across the City. Toronto's street furniture program includes a wide range of structures such as transit shelters, benches, litter bins, public toilets, information pillars and other elements. The street furniture program is currently in its sixth year.

In exchange for the exclusive right to sell and display advertising signs on public streets, the City receives revenue from Astral for the term of the contract.

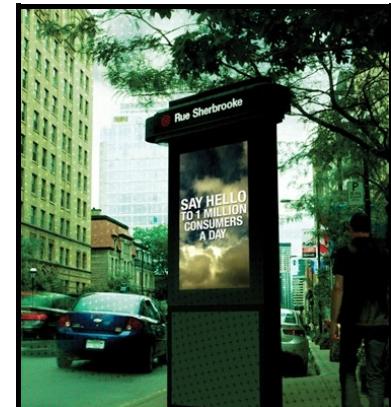
The City recognized that technology could change over the 20 year life of the contract with Astral. The contract allows Astral to bring forward new technologies for the City to consider incorporating into the street furniture program.

Toronto's street furniture contract permits the display of advertising using scrollers in all transit shelters. Currently 25 transit shelters in Toronto have changeable signage installed on scrollers. The internal scroller stores up to five ads on a mechanical roller that cycles through the ads in an action similar to that of a roller blind being raised and lowered in a window.

Toronto's street furniture contract does not permit digital advertising signs in transit shelters. In 2012, Astral requested City approval to amend the contract to permit the installation of a limited amount of electronic display signs on transit shelters. Astral proposes to display digital static copy on transit shelters with the advertising changing electronically at fixed intervals.

Street furniture programs in several other major cities incorporate digital signs which allow for the display of more advertising copy using the latest electronic sign technology. The following examples illustrate how this display technology is being implemented and the features it can support with respect to interactivity.

Montreal has 30 digital columns on streets downtown operated by Astral Out-of-Home. These digital columns contain a high definition LCD screen that displays six different ads as part of a 48 second loop. The ads are static copy that is displayed for a duration of eight seconds. No transition effects, animation or flashing lights are permitted on the sign.



Digital Column Montreal

Quebecor Media will install 40 digital transit shelters across Montreal. These shelters will be interactive with gesture recognition.

New York City permits digital advertising signs on every transit shelter, news stand and automated toilet in designated areas of the city. There are currently 10 locations with digital signs. The advertising on these digital signs in New York is governed as follows:

- Display duration up to 15 seconds;
- Transition duration up to 6 seconds;
- Full animation permitted in specific areas of the city.



New York City Newsstand

Currently only static digital advertising has been implemented in the digital signs installed in New York's transit shelters and newsstands. In addition to digital signs on the street furniture administered by the City of New York, approximately 100 outdoor digital advertising signs are installed on the entrance stairs leading to subways operated by the Metropolitan Transit Authority.

These digital signs can be full motion or static if they face a sidewalk, and display static copy if they face the stairwell leading to the subway. The distinction may be related to the safe use of the stairwell.

Washington DC originally tested 10 locations for digital advertising signs and now has approved approximately 100 locations for digital signs in street furniture.

Washington requires that the sign copy be static, displayed for a duration of 8 seconds, transition in 1 to 2 seconds and contain no flashing lights or animation.

Approximately 20 of San Francisco's bus shelters contain digital touch screen signs. This allowed Yahoo to run the Bus Stop Derby campaign for two months to showcase Yahoo's mobile apps. Transit riders could play the game in the shelter during the campaign while waiting for a bus. The Derby was part of a city-wide challenge.



Washington DC Bus Shelter with Digital FBI Wanted Poster



San Francisco Touch Screen Sign

On the Las Vegas Strip, 15 bus shelters with high definition, full colour, full motion, and full sound digital screens were installed in 2010. The 70 inch screens have a maximum rating of 2,000 nits for daylight readability.



Las Vegas Strip Bus Shelters



London Recycling Bin

During the 2012 London Olympics, some of the recycling bins that were installed incorporated digital signs that displayed public safety information, news, and stock exchange information. The bins also provided a free wi-fi connection.

## Street Furniture Summary

An overview survey of major North American municipalities that permit electronic signs in street furniture programs identified these common approaches:

- Digital signs replace traditional paper or vinyl advertising signs in transit shelters or other major street furniture elements;
- Digital signs are included in a small number of the total transit shelters in a municipality;
- These transit shelters tend to be located in the downtown and other streets with high pedestrian traffic;

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- Digital signs on street furniture have the flexibility to provide changeable public service information in addition to advertising;
  - Digital signs can support interactivity through touch screens, gesture recognition and wi-fi.

Controls used by cities to address the potential impacts of electronic signs in street furniture are similar to those applied to other electronic signs:

- Generally only static displays of advertising are allowed;
- The duration of copy display and transition intervals are controlled, with the duration of display for static electronic copy ranging between 6 to 15 seconds, with the majority at 8 seconds;
- Controls on sign brightness may apply.

In Toronto, City Council manages all elements of the City's street furniture and associated advertising signs located on public streets. The TTC manages advertising in and on transit vehicles and subway stations but the City manages the advertising in transit shelters.

In other municipalities, the management of private advertising on streets is sometimes split between the local transit authority for elements like transit shelters and the city council for all other street furniture. The arrangement varies depending on the division of jurisdictions and authority in each city.

Like Toronto, most municipalities do not regulate signs and advertising on street furniture through their sign by-laws. The specific signage requirements related to the street furniture program are generally managed through the municipality's contract with the out-of-home advertising company. This gives the municipality greater control over the details and nature of the signs incorporated into street furniture than could be achieved through a by-law.

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## 5.0 ILLUMINATED & ELECTRONIC SIGN WORKSHOP

Toronto Building invited design professionals with expertise in planning public spaces to a workshop on illuminated and electronic signs. The workshop included an evening tour of about one dozen existing electronic signs in the Downtown and adjacent to the Gardiner Expressway. The tour familiarized participants with the types of electronic signs in Toronto and provided an opportunity to observe the different kinds of electronic signs in operation within their surroundings.

The tour was followed by a session where participants discussed the constraints and opportunities for regulating the various types of illuminated and electronic signs and their impacts on the public realm. Table 5 summarizes the comments and suggestions made by workshop participants.

Table 5: Workshop Summary		
Sign Type	Potential Impacts	Methods to Manage Impacts
Illuminated Sign	<ul style="list-style-type: none"><li>Annoyance at night from light overspill or excessive brightness</li><li>Illuminated at unnecessary times</li></ul>	<ul style="list-style-type: none"><li>Controls on lighting fixtures and direction of lighting</li><li>Set maximum illumination levels</li><li>Prohibit sign's illumination from spilling over onto nearby properties</li><li>Limit times during which signs can be illuminated</li></ul>
Electronic Message Centre	<ul style="list-style-type: none"><li>Annoyance at night from light overspill or excessive brightness</li><li>Transition effects disturbing</li></ul>	<ul style="list-style-type: none"><li>Limit illumination levels</li><li>Prohibit sign's illumination from spilling over onto nearby properties</li><li>Limit transition effects</li></ul>
Electronic Static Sign	<ul style="list-style-type: none"><li>Signs are not designed to fit the architecture or work with other signs</li><li>Urban design considerations overlooked</li></ul>	<ul style="list-style-type: none"><li>Integrate to context and architecture</li><li>Require design review as part of approval process, e.g., site plan approval</li><li>Adopt design guidelines for signs</li><li>Continue to prohibit full motion in sign copy</li><li>Connect signs to major centres in Toronto and activity nodes, e.g., theatre district</li><li>Require annual certification that illumination levels remain in compliance</li></ul>

**Table 5: Workshop Summary**

Sign Type	Potential Impacts	Methods to Manage Impacts
<b>Electronic Moving Sign</b>	<ul style="list-style-type: none"> <li>• Signs are not designed to fit the architecture or work with other signs</li> <li>• Urban design considerations overlooked</li> <li>• Level of nighttime illumination</li> </ul>	<ul style="list-style-type: none"> <li>• Locate in specific precincts</li> <li>• Allow only when it is an integral element of place making</li> <li>• Integrate to context and architecture</li> <li>• Prohibit in and near residential areas</li> <li>• Require review as part of a design based approval process, e.g., site plan approval</li> <li>• Adopt design guidelines for signs</li> <li>• Connect signs to major centres in Toronto, e.g., theatre district</li> <li>• Require annual certification that illumination levels remain in compliance</li> </ul>
<b>Electronic Sign in Street Furniture</b>	<ul style="list-style-type: none"> <li>• Level of nighttime illumination</li> <li>• Size of electronic sign and ad in relation to sidewalk and pedestrian realm</li> <li>• Public safety and interference with pedestrian movement</li> </ul>	<ul style="list-style-type: none"> <li>• Adhere to the same maximum illumination levels for other electronic signs</li> <li>• Match illumination of current signs in street furniture</li> <li>• Limit to static electronic display of advertising</li> <li>• Size of sign should be pedestrian scale and sized in proportion to street furniture and width of sidewalk</li> </ul>
<b>Projected Image Sign</b>	<ul style="list-style-type: none"> <li>• Illumination levels, overspill</li> <li>• Intrusive</li> <li>• Visual effects and flicker</li> <li>• Size</li> </ul>	<ul style="list-style-type: none"> <li>• Allow in centres</li> <li>• Follow maximum illumination levels of other signs</li> <li>• Permit for a special event or as a temporary use only</li> <li>• Control visual effects, flicker, and animation</li> </ul>

The workshop provided a forum for the exchange of viewpoints on illuminated and electronic signs and directions for regulating them in Toronto.

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## **6.0 ILLUMINATED SIGNS AND THE QUALITY OF LIFE IN RESIDENTIAL AREAS**

Toronto's neighbourhoods contain residential uses as well as institutional uses such as places of worship and schools. The policies of the Toronto Official Plan considers that these complementary uses play an important role and support in the daily life of residents and residential areas.

Toronto Council has requested that the status of illuminated signs permitted in residential areas be reviewed with respect to the relationship to the quality of life in residential areas. The illuminated signs of places of worship and schools appear to be considered a particular determinant affecting the quality of this relationship.

### **6.1 Residential Sign Districts**

The City of Toronto Sign By-law (Chapter 694 of the Municipal Code) contains three sign districts where residential uses are primarily located. These sign districts are: R-Residential District; RA-Residential Apartment District; and CR-Commercial Residential District. While these sign districts are composed primarily of residential development, they also contain institutional uses, places of worship, and schools. In the CR-Commercial Residential District, commercial uses are mixed with residential uses creating more potentially complex relationships between illuminated signs and residential dwellings.

These three residential sign districts generally correspond to the land use designations of the Toronto Official Plan for Neighbourhoods, Apartment Neighbourhoods and Mixed Use Areas. Each of these designations apply to residential areas.

The residential sign districts also generally correspond to the Residential Zone, Residential Apartment Zone, and Commercial Residential Zone categories of the recently passed new city wide Zoning By-law 569-2013. The Residential Zone Categories of the new Zoning By-law permit local institutions like schools and places of worship.

Generally the regulations of the Toronto Sign By-law and the residential areas they apply to, align with the planning policies of the Toronto Official Plan's residential land use designations as well as the residential zone categories of the new Zoning By-law 569-2013. This creates a degree of consistency across these three different policy and regulatory instruments which have separate but complementary intents and purposes.

### **6.2 Relationship Between Sign Illumination and Quality of Life in Residential Areas**

The quality of life in a residential area is the product of many social, environmental and physical factors. It is negatively impacted if land uses or objects like signs create a nuisance, disruption or otherwise interfere with the use and enjoyment of surrounding residential uses.

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A condition or activity that is annoying to residents or causes harm of some kind negatively impacts the quality of life in a residential area. Illuminated signs create negative impacts on their surroundings when the illumination:

- Results in light trespass and the overspill of unwanted light onto nearby residential buildings or properties;
- Operates at inappropriate times at night;
- Creates an annoyance due to flashing lights or varying intensities of light used for visual effects;
- Creates glare when the illuminated sign is significantly brighter than its surroundings;
- Makes the sign visible from nearby properties to the extent that it interferes with the quiet enjoyment by residents of their homes and properties.



Light Trespass on Building



Light Overspill from Uplighting of Sign



Light trespass from adjacent or other nearby uses is likely the most common light-related impact affecting residential properties.

Aside from illuminated signs, unwanted light from street lights, parking lots, sports fields, and security lighting can also negatively affect the quality of life in residential areas.

The Property Standards By-law (Municipal Code, Chapter 629) contains general regulations dealing with light trespass in residential areas. A property that creates a nuisance to other properties must minimize the effect of the nuisance by providing barriers or deflectors to prevent light from shining directly into a dwelling unit.

The Toronto Green Standard contains general measures to reduce nighttime glare and light trespass. The Green Standard requires that new development have no up-lighting from exterior light fixtures and that light exterior light fixtures be shielded to prevent glare and light

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trespass onto any neighbouring properties. Since the Toronto Green Standard applies only to new development applications, not existing development, it does not deal with the lighting problems of existing development.

Light trespass created by illuminated signs is addressed in the Toronto Sign By-law.

### **6.3     Toronto's Illuminated Sign Regulations**

The Sign By-law permits all types of signs in all sign districts to be illuminated, subject to the following restrictions:

- No sign can be illuminated between 11:00 p.m. and 7:00 a.m. unless the business associated with the sign operates during this period;
- The light from the sign does not project onto any adjacent premises located in an R, RA, CR, I, or OS sign district;
- The sign's illumination does not increase the light levels within 10 metres of all points of the sign face by more than 6.5 lux above the ambient lighting level;
- The sign's illumination does not exceed 5,000 nits between sunrise and sunset and 500 nits between sunset and sunrise.

The Toronto Sign By-law requires that an illuminated sign be turned off at 11:00 p.m. Furthermore, no light from an illuminated sign can project onto any adjacent building or property. Maximum luminance and illumination levels are prescribed for the sign and the surrounding area located within 10 metres of the sign.

These controls appear to address the most common reasons why an illuminated sign could negatively impact surrounding residential uses thereby reducing the quality of life in a residential area. Enforcement of these illumination regulations where necessary, will correct inappropriate sign illumination and enhance the quality of residential areas.

### **6.4     Options for Residential Areas**

It appears that some illuminated signs on places of worship and schools located in residential areas may be creating an adverse impact on nearby residential properties. This could be the result of direct or indirect illumination and may also be primarily associated with electronic signs with readograph copy.

If the City concludes that the current sign illumination controls do not adequately mitigate these impacts in residential areas, two options can be considered.

#### **Option 1: Strengthen Sign Illumination Controls**

If it is thought that the sign by-law controls do not adequately protect residential properties from the light trespass or other light related annoyances originating from the illuminated signs

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of places of worship and schools, the by-law could be amended to include stronger controls on illuminated signs in residential sign districts.

Potentially stronger controls on illuminated signs in residential areas to consider include:

- Prohibiting the illumination of any sign:
  - ▶ In a residential area;
  - ▶ Adjacent to a residential dwelling;
  - ▶ Within a set distance from a residential dwelling;
  - ▶ Visible from a residential dwelling;
- Prohibiting signs with white backgrounds to reduce the brightness of internally illuminated signs;
- Prohibiting all types of electronic signs including electronic message centres;
- Requiring any sign in a residential area to be turned off earlier than the current 11:00 p.m. curfew;
- Requiring all signs to be externally illuminated with appropriate shielding to prevent glare or light trespass;
- Enacting stricter provisions for electronic signs with readograph copy.

The type of control chosen should also consider the need for persons to find and identify places of worship and schools after sunset and at night. Illuminated signs are helpful in this regard with respect to security and way finding.

### **Option 2: Enact Additional City-wide By-law Regulating Outdoor Lighting**

Light pollution affects the quality of life in the entire City of Toronto. On a city-wide basis, illuminated signs are only one and likely a minor contributor to the amount of light pollution in Toronto. For example, street and parking lot lighting illuminate much larger portions of Toronto than signs. This light and illumination likely has a greater impact on the amount of light pollution and skylight in Toronto. Nevertheless, annoying light regardless of its source can affect the quality of life in an area of Toronto.

Some municipalities have adopted comprehensive by-laws dealing with outdoor lighting. These by-laws minimize the adverse off-site impacts of lighting and curtail light pollution while conserving energy, maintaining night-time safety, security, and the enjoyment of property.

Section 8(1) of the City of Toronto Act gives Toronto City Council broad powers to pass by-laws it deems appropriate including the regulation of outdoor illumination and related nuisances.

The Illuminating Engineering Society of North America has prepared a Model Outdoor Lighting Ordinance as an example of appropriate municipal regulations for outdoor lighting. It provides an example of how a municipality can manage the major issues associated with outdoor lighting.

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## **7.0 RECOMMENDATIONS**

### **7.1 Illuminated Signs**

The Toronto Sign By-law controls and limits the brightness of all illuminated signs in all sign districts including residential areas. The illumination controls apply to electronic signs as well as non-electric signs that are illuminated.

As described earlier, sign illumination in Toronto is controlled both with respect to the brightness of the sign and light overspill from the sign onto nearby properties. These lighting controls focus on mitigating and preventing negative impacts from illuminated signs on surrounding uses including residential uses.

Inappropriate illumination levels of signs are mainly an issue at night. The current night time maximum illumination of 500 nits (candelas per square metre) is at the high end of the range of the maximum night time illumination followed by other municipalities.

As has been described earlier, the illuminated and electronic sign workshop included a tour of existing static and moving copy electronic signs. Observations in the field revealed varying levels of sign brightness for these signs, including in relation to similar electronic signs nearby. In some instances, electronic sign was visibly illuminating the immediately surrounding area such as a public sidewalk.

Light readings of these electronic signs were not taken in the field so it cannot be determined the extent to which these electronic signs comply with the luminance and illuminance standards of the City's Sign By-law.

A review of the illumination controls adopted by other cities for electronic signs (Table 4) indicates that several apply lower nighttime illumination levels for electronic signs and ambient light levels. Maximum night time illumination levels range from 220 to 500 candelas per square metre.

Lowering the maximum night time illumination level of signs in Toronto from 500 to 300 nits (candelas per square metre) would set the maximum night time illumination level for signs in Toronto within the range of maximum night time sign illumination implemented by other major Canadian municipalities.

Toronto's current maximum level for light trespass is 6.5 lux above ambient light levels. As shown in Table 4, most municipalities that address light trespass use a lower level of 3.0 lux or 0.3 foot candles above ambient to deal with light trespass. These illumination levels are approximately equivalent.

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Reducing the maximum light trespass to 3.0 lux from the current 6.5 lux will better control light trespass in Toronto and better align with the controls of other municipalities that regulate light trespass.

**Recommendation**

- (a) Revise the maximum illumination level for signs to 300 nits between sunset and sunrise.
- (b) Revise the maximum level for light trespass to 3.0 lux above ambient light levels when measured at a distance of 10 metres.

## **7.2 Electronic Signs in Street Furniture**

The City of Toronto is considering introducing digital screens into a limited number of transit shelters. These digital signs would replace the current panels displaying advertising on paper or other media illuminated internally.

These electronic signs will be located at sidewalk level in the pedestrian realm. They will likely be located on streets with high pedestrian and vehicular traffic to maximize advertising exposure to consumers and passers by.

The light from the advertising panel will also provide ambient and security lighting for users of the transit shelter, similar to the current case in this pedestrian oriented setting and context.

**Recommendation**

- (a) Apply the following requirements to an electronic sign installed in a transit shelter:
  - (i) Display only electronic static copy with an 8 to 10 second message duration, maximum 1.0 transition with no visible effects;
  - (ii) Maximum illumination from sunset to sunrise equivalent to the illumination of non-electric advertising signs in the transit shelter or 3.0 lux above ambient light conditions, whichever is less.

## **7.3 Electronic Message Centre Sign**

The Toronto Sign By-law permits up to 30% of a wall sign and 50% of a ground sign to consist of sign copy that is changed electronically. This is an electronic message centre for readograph sign copy.

Electronic message centres are not permitted in the Residential Sign District, but they can be useful components of signs for non-residential uses found in residential areas and located among residential uses. These non-residential uses include schools, places of worship, libraries, community centres, nursing homes and hospitals.

The recommended revisions to night time sign illumination and light trespass will help to

mitigate potential negative impact from illuminated signs on these non-residential uses in residential areas. Additional controls on electronic message centres in Residential Sign Districts serve to round out the control of illumination for these signs in residential areas.

### **Recommendation**

- (a) Permit electronic message centre signs (signs containing readograph copy that is changed electronically) only on signs associated with schools, places of worship, libraries, community centres, nursing homes and hospitals when located in a Residential Sign District.
- (b) Set a 20 minute minimum message display time for readograph copy.
- (c) Prohibit the display of any visible effects during the message transition including motion, fading or flashing.
- (d) Prohibit the illumination of an electronic message centre between 9:00 p.m. and 7:00 a.m.

## **7.4 Projected Image Sign**

The Toronto Sign By-law currently does not permit projected image signs (Chapter 694-14.D).

These signs by their nature are not suitable replacements for permanent signs that identify a business, premises or display third party advertising.

Projected image signs appear to be mainly special applications of light projection technologies to display text or images. The major applications are for cultural and other special events of a limited duration.

The support and equipment involved in projecting the text and images differs from other temporary or permanent signs.

Projection equipment must be set up at a location and projected onto a surface in the distance. This can involve multiple properties.



Projected Image Sign on a Building Wall



Guggenheim Museum, New York

Since light is projected across a distance to a surface, this type of sign creates potential safety issues for persons or vehicles passing inadvertently through a strong light path, possibly at risk to themselves. In some cases, laser projectors are used creating concerns of eye injury related to the unsafe use of lasers.

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Projected image signs have the potential to be highly creative signs and displays however by their nature and application, they are a specialized type of sign requiring appropriate controls.

### **Recommendation**

Projected image signs be limited to first party signs where approved through a Signage Master Plan or by a special event permit issued by the City of Toronto.

## **7.5 Electronic Static Copy Sign**

Electronic static copy signs display sign copy that is fixed and displayed for a set period or dwell time. These signs are primarily third party advertising signs, similar to the situation in other major Canadian cities which generally do not permit first party signs to incorporate electronic sign copy other than readograph copy.

Currently electronic static copy signs are permitted in two sign districts: the Downtown Yonge Street Special Sign District and the Gardiner Gateway Special Sign District. They are not permitted outside these areas without approval of an amendment to the Sign By-law by City Council.

Since the passing of the current Sign By-law in 2010, there have been several amendments to the Sign By-law to locate new electronic static copy signs outside of the two downtown special sign districts. Considerations relevant to the location of electronic static copy signs outside of the two downtown special sign districts where they are currently permitted include:

- appropriate locations for these signs;
- impact of electronic sign on sensitive uses such as residential;
- controlling sign illumination and the impact of sign related lighting on surrounding uses;
- separation from other electronic copy signs and sensitive uses.

For first party signs, incorporating electronic static copy into a portion of a wall or ground sign provides an opportunity to change first party copy in a similar manner to readograph copy. The potential impact of such electronic signs on residential uses can be addressed by setting minimum message display times, setting separation distances to residential dwellings and by limiting such electronic signs to commercial and employment districts which do not contain residential uses. Separation distances from other electronic signs prevents creating a concentration of electronic signs that change their copy at different intervals of time.

Similar locational restrictions and controls are relevant to third party advertising signs displaying static electronic copy.

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## **Recommendation**

- (a) Permit first party signs to display static electronic copy in a Commercial (C) Sign District and an Employment (E) Sign District subject to:
  - (i) The maximum sign area for static electronic copy be:
    - 30% of a wall sign up to a maximum of 3.0 square metres;
    - 50% of a ground sign up to a maximum of 5.0 square metres;
  - (ii) The static electronic copy be displayed for a minimum of 20 minutes;
  - (iii) A maximum message transition of one second with no display of visual effects during the message transition including motion, fading or flashing;
  - (iv) Located a minimum of 60 metres from an intersection;
  - (v) Located a minimum of 60 metres from a residential sign district or dwelling unit;
  - (vi) Located a minimum of 300 metres from any other electronic copy sign.
- (b) Permit third party signs to display static electronic copy in a Commercial (C) Sign District, an Employment (E) Sign District, and a Utility (U) Sign District subject to:
  - (i) The sign is located a minimum of 60 metres from a street intersection;
  - (ii) The sign is located a minimum of 60 metres from an R, RA, CR, I, or OS Sign District;
  - (iii) The sign's electronic copy does not face any open space, institutional or residential premise that is located within 250 metres radius of the sign;
  - (iv) The sign is located a minimum of 500 metres from any third party sign containing electronic copy;
  - (v) The sign is located a minimum of 150 metres from any third party advertising sign that does not display electronic copy

### **7.6 Electronic Moving Copy Sign**

Electronic moving copy signs in Toronto tend to be located in the downtown special sign districts or related to a major cultural, sports, or entertainment facility and venue. separation. This orientation is expected to continue with perhaps an increase in these signs within designated growth centres.

In these locations, electronic moving copy signs generally complement and support the activity or use to which they apply. Electronic moving copy signs can also be one element of place making when used to help define the intended visual character and public realm in the area.

Given the specialized nature of these signs and individual contextual considerations concerning their design and location, the current provisions of the Sign By-law appear to remain suitable for dealing with applications for new electronic moving copy signs.

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In this regard, where any new electronic moving sign applications are considered in the future, they should be subject to approval of a signage master plan. This will give the City the opportunity and flexibility to address the suitability of the proposed sign to its context including considerations related to sight lines, view sheds, proximity of sensitive and other uses that could be impacted by the sign's operation.

**Recommendation**

That the current regulations governing electronic moving copy signs be retained and include the requirement that the signs be subject to a signage master plan, where permitted.