

THE CORPORATION OF THE TOWN OF XXXXXX

BY-LAW NO. # XXXX

A By-law to Regulate Light Pollution

WHEREAS Council at its meeting of [Month Day, Year] adopted the recommendation from the XXXXXX Committee meeting of [Month Day, Year], in Staff Report #, respecting adoption of a light pollution by-law; AND WHEREAS regulation of the installation and use of outdoor lighting can reduce the emission into the night sky of light rays which can have a detrimental effect on astronomical observation and improve the visibility of hazards; AND WHEREAS the Council of the Corporation of the Town of XXXXXX wishes to regulate the outdoor lighting in order to provide a safe environment for citizens and minimizing glare and light trespass;

AND WHEREAS the Town of XXXXXX Act, Year permits the Council of the Corporation to pass by-laws for prohibiting or regulating outdoor light fixtures.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWN OF XXXXXX ENACTS AS FOLLOWS:

1. Definitions

1.1 In this By-law:

- (a) "Automatic Timing Device" means a device which automatically turns light fixtures or circuits on and off;
- (b) "Average Maintained Horizontal Illuminance: means the density of light flux in an outdoor area or areas calculated:
 - (i) on a horizontal plane at ground level;
 - (ii) as an average flux density over the surface of the outdoor area or areas; and
 - (iii) applying a light loss factor calculated by methods prescribed by the lighting handbook of the Illuminating Engineering Society or any successor publication;

with calculations made by, or on the basis of lighting plans and other information provided by, manufacturers or suppliers of the Outdoor Light Fixtures and made in a manner consistent with the lighting handbook of the Illuminating Engineering Society or any successor publication;

- (c) "Average Maintained Vertical Illuminance" means the density of light flux in an outdoor area or areas calculated:
 - (i) on a vertical plane at the vertical surface of that part of the Building or other structure being illuminated;
 - (ii) as an average flux density over the entire exterior surface of that part of the Building or other structure being illuminated; and
 - (iii) applying a light loss factor calculated by methods prescribed by the lighting handbook of the Illuminating Engineering Society or any successor publication;

with calculations made by, or on the basis of lighting plans and other information provided by, manufacturers or suppliers of the Outdoor Light Fixtures and made in a manner consistent with the lighting handbook of the Illuminating Engineering Society or any successor publication;

- (d) "Building" has the meaning ascribed to it in the Building Code Act, 1992, or any successor legislation;
- (e) "By-law Enforcement Officer" means all individuals from time to time appointed by Council of the Corporation as by-law enforcement officers for the purpose of enforcing the provisions of this By-law;
- (f) "Chief Building Official" means the Corporation's chief building official;
- (g) "Commissioner of Transportation and Works" means the person holding the position of the Corporation's commissioner of transportation and works;
- (h) "Corporation" means The Corporation of the Town of XXXXXX;
- (i) "Designated Official" means the Commissioner of Transportation and Works or any other Person designated by Council of the Corporation to administer certain provisions of this By-law;
- (j) "Dwelling Unit" means living accommodation comprising a single housekeeping unit designated or intended for use by one individual or by individuals living together as a single housekeeping unit and consisting of a room or suite or rooms in which both culinary and sanitary facilities are provided for the exclusive use of such individual or individuals;
- (k) "Existing Outdoor Light Fixtures" has the meaning ascribed to it in Subsection 11.1;
- (l) "Grade" means, with reference to a Building or to an Outdoor Light Fixture affixed to a Building, the average level of proposed or finished ground adjoining the Building at all exterior walls and, when used with reference to an Outdoor Light Fixture affixed to a pole or to a structure other than a Building, means the average level of proposed or finished ground immediately surrounding such pole or structure other than a Building;
- (m) "Illuminating Engineering Society" means the Illuminating Engineering Society of North America or any successor organization;
- (n) "Internally Illuminated Sign" means a Sign of which all or part of the external surface emits light received from an internal light source;
- (o) "Lamp" means an artificial source of light and includes a bulb or tube;
- (p) "Lane" means a public or a private means of access which affords a secondary means of access to an abutting property in addition to a Street;
- (q) "Light Fixture" means a complete artificial lighting unit consisting of one or more Lamps and their ballasts, where applicable, together with parts designed to distribute the light, position and protect the Lamps and connect the Lamps to the power supply;
- (r) "Lot" means a parcel or tract of land:
 - (i) which is a whole lot as shown on a registered plan of subdivision, but a registered plan of subdivision for the purpose of this definition does not include a registered plan of subdivision which has been deemed not to be a registered plan of subdivision under a by-law passed pursuant to Subsection 50(4) of the Planning Act or a predecessor thereof; or

- (ii) that fronts on a Street and is a separate parcel of land without any adjoining lands being owned by the same owner or owners as of the date of passing of this By-law, or
- (iii) the description of which is the same as in a deed which has been given consent pursuant to Section 50 of the Planning Act, or a predecessor thereof,

but for the purpose of this definition, no parcel or tract of land ceases to be a lot by reason only of the fact that part or parts of it has or have been conveyed to or acquired by the Corporation, Her Majesty in Right of Ontario, Her Majesty in Right of Canada, Etc.;

- (s) "Outdoor Light Fixture" means a Light Fixture, permanent or portable, used or for use out of doors, including search lights, spotlights and floodlights, but not including Internally Illuminated signs;
- (t) "Outdoor Recreational Facilities" means lands or facilities used for recreational purposes, including without limitation playgrounds, racquet courts, softball diamonds, baseball diamonds, soccer fields or other athletic fields, lawn bowling greens, golf courses, skating rinks, swimming pools and snow skiing, carried on in whole or in part outside a fully-enclosed Building and together with necessary accessory Buildings and structures;
- (u) "Owner" includes the registered owner of real property, the Person who owns a leasehold estate in real property, and any Person having control of real property, and also includes a Person the owner authorizes in writing to act on his or her behalf;
- (v) "Person" means any individual, partnership, joint venture, corporation or other entity;
- (w) "Shielded" means that 100% of the lumens emitted from the Light Fixture are projected below an imaginary horizontal plane passing through the highest point on the fixture from which light is emitted;
- (x) "Sign" means any advertising device or notice and means any medium including its structure and any other component parts which is used or is capable of being used to attract attention to a specific subject matter;
- (y) "Street" means a public highway as defined by the Municipal Act and shall exclude a Lane or any private right-of-way or unopened road allowance or any street which is shown on a registered plan of subdivision which has been deemed not to be a registered plan of subdivision for the purposes of Subsection 50(3) of the Planning Act, or a predecessor thereof;
- (z) "Street Townhouse" means a Building divided vertically into three or more Dwelling Units, each of which shares a wall above Grade, and each of which has frontage on a Street.

PART I

APPLICATION AND COMPLIANCE

2. Appliance of By-law

2.1 Except as otherwise provided in this By-law, this By-law applies to all Outdoor Light Fixtures erected, installed or used in the Town of XXXXXX in conjunction with:

- (a) commercial uses, including parking lots;
- (b) industrial uses;

- (c) institutional uses;
 - (d) recreational or athletic uses; or
 - (e) residential uses of five Dwelling Units or more on a single Lot.
- 2.2 All Outdoor Light Fixtures that produce light directly or indirectly by the combustion of natural gas or other fossil fuels, such as gas lamps, are exempt from the requirements of the By-law.
- 2.3 Outdoor Light Fixtures used exclusively in conjunction with Street Townhouses are exempt from the requirements of this By-law.
- 2.4 Nothing in this By-law prohibits the temporary display of incandescent lights, other than search lights, as part of the celebration of a religious or cultural event during a reasonable period of celebration of that event which reasonable period shall in no event extend for more than thirty days prior to the date of the event or celebration or thirty days after such date.
- 2.5 Except as provided in Subsection 11.1, the provisions in Parts II and III of this By-law do not apply to Outdoor Light Fixtures existing and installed prior to the effective date of this By-law.

3. Compliance

No Person shall erect, install or use, or permit to be erected, installed or used, an Outdoor Light Fixture otherwise than in compliance with the provisions of this By-law.

PART II

GENERAL REQUIREMENTS REGARDING INSTALLATION OF OUTDOOR LIGHT FIXTURES

4. Shielding

- 4.1 Except as provided in Subsection 4.2, no Person shall erect, install, or use, or permit to be erected, installed or used, an Outdoor Light Fixture which is not Shielded.
- 4.2 The following Outdoor Light Fixtures are not required to be Shielded:
- (a) Outdoor Light Fixtures which are illuminance tube lighting containing neon, argon or krypton;
 - (b) Outdoor Light Fixtures Illuminating Building entrance or exit doorways where such fixtures are incandescent fixtures with each fixture having light sources totalling not more than 100 watts and provided that there are not more than two fixtures lighting each entrance or exit doorway;
 - (c) Outdoor Light Fixtures used exclusively for and in connection with the television broadcasting of events at Outdoor Recreational Facilities, but only while the television broadcasting is being carried on;
 - (d) Outdoor Light Fixtures used exclusively for an in connection with the production of movies or commercials, but only while production is being carried on and provided that any permits required from the Corporation or any other governmental authority for the production of such movies or commercials have been obtained; and

- (e) Outdoor Light Fixtures used exclusively for an in connection with the presentation of concerts, plays or other non-athletic entertainment events in parks or on other lands owned by the Corporation and used for public purposes.
- 4.3 Where Outdoor Light Fixtures are required to be Shielded, no Person shall erect, install or use, or permit to be erected, installed or used, an Outdoor Light Fixture which is of a design which allows the direction of light projection to be modified after installation unless the Outdoor Light Fixture is Shielded in all possible configurations of the fixture.
- 5. Wavelength Distribution
 - 5.1 Except as provided in Subsection 5.2, no Person shall erect, install or use or permit to be erected, installed or used a Lamp or an Outdoor Light Fixture which includes or is designed to include a Lamp which is of a type other than:
 - (a) incandescent;
 - (b) low pressure sodium;
 - (c) high pressure sodium;
 - (d) carbon arc; or
 - (e) any other type which satisfies the wavelength distribution requirements set out in Schedule A.
 - 5.2 The provisions of Subsection 5.1 do not apply;
 - (a) to Lamps or Outdoor Light Fixtures that illuminate areas used for the outdoor display of merchandise for sale, provided that the applicable zoning by-law and other applicable law permits such outdoor display of merchandise;
 - (b) to Lamps or Outdoor Light Fixtures which come within the provisions of paragraphs (c), (d) or (e) of Subsection 4.2.
- 6. Mounting Height
 - 6.1 Except as provided in Subsection 6.2, no Person shall erect, install or use or permit to be erected, installed or used an Outdoor Light Fixture at a mounting height of 9.2 meters above Grade.

Mounting height refers to the height of the Lamp, or the highest of the Lamps if there is more than one Lamp, forming part of the Outdoor Light Fixture.
 - 6.2 There is no restriction on the mounting height of Outdoor Light Fixtures lighting Outdoor Recreational Facilities or Streets.
- 7. Automatic Timing Devices
 - 7.1
 - (a) No Person shall erect, install or use or permit to be erected, installed or used, Outdoor Light Fixtures in conjunction with uses described in paragraphs (a), (b), (c) and (d) of Subsection 2.1 unless a sufficient number of such Outdoor Light Fixtures are equipped with Automatic Timing Devices which turn off Outdoor Light Fixtures between 11:00 p.m. and sunrise the following day to satisfy the requirements of Section 10.

- (b) The Owners of real property on which Outdoor Light Fixtures have been equipped with Automatic Timing Devices shall maintain the Automatic Timing Devices in good state of repair and replace any Automatic Timing Devices which are damaged, destroyed or removed.

PART III

ILLUMINANCE LEVELS

8. Horizontal Illuminance

- 8.1 All Persons erecting, installing or using, or permitting to be erected, installed or used, Outdoor Light Fixtures in conjunction with uses described in Subsection 2.1 shall ensure that:
 - (a) Except as provided in paragraph (b) and (c), the Average Maintained Horizontal Illuminance of all outdoor areas on a Lot shall not exceed 20 lux;
 - (b) In an area used for the outdoor display of merchandise for sale, provided that the applicable zoning by-law and other applicable law permits such outdoor display of merchandise, the Average Maintained Horizontal Illuminance shall not exceed 40; and
 - (c) In an Outdoor Recreational Facility, the Average Maintained Horizontal Illuminance shall not exceed 60 lux.

9. Illumination of Vertical Surfaces

9.1

- (a) Except as provided in paragraph (b), where vertical surfaces of Buildings or other structures are illuminated for decorative purposes or for any other purpose, the Average Maintained Vertical Illuminance of such vertical surfaces shall not exceed 20 lux;
- (b) The provisions of paragraph (a) shall not apply to Outdoor Light Fixtures installed in conjunction with Outdoor Recreational Facilities.

PART IV

HOURS OF OPERATION

10. Turning Off Outdoor Light Fixtures

- 10.1 All Owners of property on which Outdoor Light Fixtures are erected, installed or used in conjunction with the uses described in paragraphs (a), (b), (c) and (d) of Subsection 2.1 shall ensure that those Outdoor Light Fixtures are turned off between 11:00 p.m. and sunrise the following day except as follows:
 - (a) Outdoor Light Fixtures may remain on to illuminate outdoor areas for security purposes provided that they are shielded and that the Average Horizontal Illuminance of outdoor areas shall not exceed:
 - (i) 5 lux for all outdoor areas other than those described in subparagraph (ii); and
 - (ii) 10 lux in any area which is used for the outdoor display of merchandise for sale, provided that such outdoor display of merchandise is permitted under the applicable zoning by-law or any other applicable law;

- (b) where an outdoor recreational use in an Outdoor Recreational Facility continues after 11:00 p.m., Outdoor Light Fixtures required to be on in connection with that use are permitted, but only while that use continues;
- (c) where a concert, play or other entertainment event in a park or on other lands owned by the Corporation and used for public purposes takes place or continues after 11:00 p.m., Outdoor Light Fixtures required to be on in connection with that event are permitted, but only while the event takes place or continues; and
- (d) in an area which is used for commercial, industrial or institutional uses where such uses are carried on after 11:00 p.m. and personnel relevant to such uses are working on the premises, Outdoor Light Fixtures required to be on in connection with such uses are permitted, but only while as such uses are carried on.

PART V

REPLACING EXISTING OUTDOOR LIGHT FIXTURES

11. Existing Outdoor Light Fixtures

11.1

- (a) Except as provided in paragraphs (b) and (c), Outdoor Light Fixtures existing and installed on a Lot prior to the effective date of this By-law ("Existing Outdoor Light Fixtures") are exempt from the provisions of this By-law save and except the provisions of Part IV-Hours of Operation.
- (b) No Person shall modify or permit to be modified an Outdoor Light Fixture including an Existing Outdoor Light Fixture in a way which changes that fixture from a fixture which is Shielded to a fixture which is not Shielded or from a fixture which satisfies the requirements of Section 5.1 to a fixture which does not satisfy those requirements.
- (c) Where an Owner:
 - (i) constructs a Building on a Lot which is used or intended to be used for one or more purposes described in Subsection 2.1 and on which there are Existing Outdoor Light Fixtures, and
 - (ii) in conjunction with that construction, replaces 50% or more of the Existing Outdoor Light Fixtures on the Lot or increases by 50% or more the number of Outdoor Light Fixtures existing on the Lot immediately prior to the effective date of this By-law,

the Owner shall ensure that all Outdoor Light Fixtures on that Lot, including Existing Outdoor Light Fixtures, comply with all of the provisions of this By-law and if Existing Outdoor Light Fixtures are required to be replaced or modified to achieve compliance, the Owner shall replace or modify those Existing Outdoor Light Fixtures.

PART VI

PLANS AND DOCUMENTS

12. Plans and Documents

12.1 Where a Person:

- (a) proposes to lay out and establish a commercial parking lot or proposes to construct a Building on a Lot used or intended to be used for one or more purposes described in Subsection 2.1; and
- (b) proposes to install or erect Outdoor Light Fixtures in conjunction with such commercial parking lot or Building;

that Person shall file with the Designated Official a lighting plan together with related documents and information to satisfy the Designated Official that the proposed lighting will comply with the provisions of this By-law. Where the provisions of paragraph (c) of Subsection 11.1 apply, the lighting plan, documents and information also shall satisfy the Designated Official that Existing Outdoor Light Fixtures will comply with the provisions of this By-law.

12.2 The Submission shall contain, but shall not be limited to the following:

- (a) plans indicating;
 - (i) the location of all Buildings and structures on the property,
 - (ii) the location, number, type, position, elevation and mounting height of all Outdoor Light Fixtures;
 - (iii) the number and location of Outdoor Light Fixtures to be equipped with Automatic Timing Devices; and
 - (iv) any building design or other features which may affect the nature, intensity or direction of light emission from Outdoor Light fixtures;
- (b) description of and background information regarding all Outdoor Light Fixtures, including;
 - (i) power (in watts);
 - (ii) type of light source;
 - (iii) filtering, if any;
 - (iv) information evidencing whether or not Outdoor Light Fixtures are Shielded;
 - (v) information as to light distribution in the horizontal and vertical phase planes;
 - (vi) information as to light distribution in the horizontal plane between 11:00 p.m. and sunrise the following day; and
 - (vii) manufacturer's catalogue information and drawings; and
- (c) information regarding the design capability of the Outdoor Light Fixture to permit any change in the items referred to in paragraphs (a) and (b).

The above required plans and descriptions shall be sufficiently complete to enable the Designated Official to readily determine whether the requirements of this By-law will be complied with.

- 12.3 If the plans and descriptions referred in Subsection 12.1 do not enable the Designated Official to readily determine whether the requirements of this By-law will be complied with, the Person referred to in Subsection 12.1 shall submit further evidence of compliance, such as reports of tests evidencing compliance performed and certified by a testing laboratory recognised by the Illuminating Engineering Society.
- 12.4
- (a) The Chief Building Official shall not issue a building permit for any construction in respect of which a lighting plan is required pursuant to Subsection 12.1 if the required plan has not been filed and approved by the Designated Official.
 - (b) When a lighting plan is required to be filed under this By-law in connection with the laying out and establishment of a commercial parking lot, Council of the Corporation or its designated official for granting site plan approval shall refuse to grant site plan approval for such development if the required lighting plan has not been filed and approved by the Designated Official.
- 12.5 No Person shall commence construction of any development referred to in Subsection 12.1 until the lighting plan has been filed and approved by the Designated Official.
- 12.6
- (a) Where an approved lighting plan is required, no Person shall erect or install, or permit to be erected or installed, Outdoor Light Fixtures except in accordance with the approved lighting plan or a change application approved in accordance with paragraph (b).
 - (b) If there is an approved lighting plan in place and a Person proposes to modify the approved lighting plan or to install Outdoor Light Fixtures otherwise than in accordance with the approved lighting plan (including any change in the type of Lamp shown on the approved plan) the applicant shall submit a change request to the Designated Official together with adequate information to evidence compliance with the requirements of this By-law.

PART VII

COMPLIANCE ALTERNATIVES AND ADMINISTRATIVE EXEMPTIONS

13. Compliance Alternatives

- 13.1 The provisions of this By-law are not intended to prevent the use of any design, material or method of installation not specifically prescribed by this By-law, provided any such alternate design, material or method of installation has been approved by the Designated Official. The Designated Official may approve any such proposed alternative provided that he or she finds that it:
- (a) provides at least approximate equivalents to the applicable specific requirements of this By-law; and
 - (b) is otherwise satisfactory and complies with the intent of this By-law.

14. Administrative Exemptions

- 14.1 Council of the Corporation may grant an exemption or minor variance from some or all of the provisions of this By-law upon the application of any Person if in the opinion of council

compliance with the By-law is impracticable and the general intent and purpose of the By-law are maintained.

- 14.2 If the request for an exemption or minor variance is approved by council, a written record of the request and approval shall be kept by the Corporation and shall be open to public inspection.

PART VIII

INSPECTION AND OFFENCES

15. Inspectors

- 15.1 All By-law Enforcement Officers hereby are appointed inspectors for the enforcement of this By-law.

16. Entry

- 16.1 For the purpose of determining whether there is compliance with this By-law, an inspector may have access to or enter any land, Building or structure governed by this By-law between the hours of 6:00 am and 9:00 p.m. and may conduct an inspection.
- 16.2 No inspector may enter a Building or structure that is also a dwelling without the consent of the occupant or without first obtaining and producing a warrant.
- 16.3 An inspector conducting an inspection shall produce identification issued by the clerk of the Corporation upon request.

17. Powers on Inspection

- 17.1 Any inspector conducting an inspection may inspect the land, Building or structure and may question a Person on matters relevant to the inspection.
- 17.2 No Person shall hinder or obstruct an inspector lawfully conducting an inspection under this Act.
- 17.3 Any Person who contravenes Subsection 17.2 is guilty of an offence.

18. Application for Warrant

- 18.1 An inspector may apply to a Justice of the Peace for a warrant if:
- (a) the inspector has been denied access or entry to any land, Building or structure;
 - (b) the inspector has been instructed or directed to leave any land, Building or structure; or
 - (c) the inspector has been obstructed in the conduct of the inspection.

19. Offence and Penalty

- 19.1 Whenever in this By-law there is a duty imposed upon any Person and such Person fails to perform such duty, such Person is guilty of an offence under this By-law and upon conviction is liable to a maximum fine as established pursuant to the Provincial Offences Act, or any successor legislation.
- 19.2 Without limiting any other provision of this By-law and in addition thereto, any Person who otherwise contravenes the provisions of this By-law is guilty of an offence and upon conviction is

liable to a maximum fine as established pursuant to the Provincial Offences Act, or any successor legislation.

PART IX
MISCELLANEOUS

20. Citation

20.1 This By-law may be cited as the "Light Pollution By-law".

21. Illuminating Engineering Society

Notwithstanding any other provisions in this By-law, nothing in this By-law shall have the effect of requiring outdoor lighting which provides a lower level of illuminance for a use or activity than the minimum level of illuminance recommended for such use or activity in the lighting handbook of the Illuminating Engineering Society in effect at the time of installation or replacement of Outdoor Light Fixtures or any successor publication.

22. General

22.1 Schedule A hereto is incorporated in and forms part of this By-law.

22.2 The division of this By-law into parts, sections, subsections, paragraphs and subparagraphs and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation of this By-law.

22.3 If any provision of this By-law or the application thereof to any Person or circumstance is invalid, this invalidity shall not affect other provisions or application of this By-law which can be given effect without the invalid provision or application, and to this end the provisions of this By-law are severable.

23. Effective Date

23.1 This By-law shall come into effect upon third reading and passage of the By-law.

READ A FIRST TIME THIS XX DAY OF XXXX MONTH, XXXX YEAR

READ A SECOND TIME THIS XX DAY OF XXXX MONTH, XXXX YEAR

READ A THIRD TIME AND PASSED THIS XX DAY OF XXXX MONTH, XXXX YEAR

Mayor

Clerk

SCHEDULE A

WAVELENGTH DISTRIBUTION REQUIREMENTS

For purposes of this Schedule A "Total Emergent Flux" means the total amount of light energy emitted by a Lamp in the wavelength band between 320 and 700 nanometers.

Lamps of Outdoor Light Fixtures satisfy the requirements of Section 1 of the By-law:

- (a) where
 - (i) not more than 5% of the Total Emergent Flux emitted by the Lamp or the Lamp or Lamps forming part of the Outdoor Light Fixture is at wavelengths between 320 nanometers and 340 nanometers;
 - (ii) Not more than 20% of the Total Emergent Flux emitted by the Lamp or the Lamp or Lamps forming part of the Outdoor Light Fixture is at wavelengths between 340 nanometers and 440 nanometers; and
 - (iii) Not more than 15% of the Total Emergent Flux emitted by the Lamp or the Lamp or Lamps forming part of the Outdoor Light Fixture is at wavelengths between 641 nanometers and 700 nanometers;

or

- (b) where the Lamp or the Lamp or Lamps forming part of the Outdoor Light Fixture emit light energy in a smooth continuum without an emission line anywhere in the wavelength range of 320 nanometers to 700 nanometers.