

# **CITY OF GLOUCESTER**

## **Title: Lighting Conservation Ordinance**

### **8.6 Outdoor Illumination Standards, Including Standards for Illuminated Signs**

#### **8.6.1 Purpose**

The purpose of this section is to establish standards pertaining to the outdoor illumination of streets and public ways, property used for commercial and industrial uses and multi-family dwellings, so as to reduce light pollution, energy consumption and related costs, to enhance pedestrian and vehicular safety, to support property values, and to promote the aesthetic appearance of the city.

#### **8.6.2 Definitions**

**ADMINISTRATOR:** The Inspector of Buildings or his authorized representative is the enforcing agent.

**FOOTCANDLE (FC):** A measurement of the amount of light reaching an object. A footcandle is the measurement of the intensity of one lumen of light falling on one square foot of surface area one foot away from the source.

**FULL CUT –OFF FIXTURE DESIGN (FULLY SHIELDED):** A luminaire which is designed, constructed, and installed so that no light is emitted at an angle above the horizontal plane through the lowest light emitting part (including refractors, reflectors, or other devices) of the luminaire.

**LIGHT TRESPASS:** Illumination from a luminaire that goes beyond the lot lines of the lot on which the luminaire is located at a footcandle level greater than the original (natural) illumination level as measured at the lot line in a horizontal and vertical plane.

**LUMEN:** The basic unit of measurement for light at its source. For the purposes of this ordinance, the lumen output shall be the initial lumen rating listed by the bulb manufacturer's specification data sheet at the rated voltage and power (watts). Example: The illuminance of a full moon is .01 footcandles or .01 lumens/sqft.

**LUMINAIRE:** A complete lighting unit or fixture, consisting of a lamp or lamps, ballast (when applicable), and any part designed to distribute the light, position the unit, protect the lamps (housing), and/or connect lamps to the power supply.

#### **8.6.3 Application**

8.6.3.1 Except as provided in section 8.6.3.2, the illumination standards established by this section apply to any outdoor luminaire, or to any outdoor

illuminated sign, or any commercial or industrial use, or any multi-family residential dwelling, street, roadway or walkway lighting in the City of Gloucester.

8.6.3.1.1 Exemptions. The following lights shall be exempt from the specific requirements of this ordinance but shall be placed and directed to minimize the detrimental effects of glare on motorists, boaters, pedestrians and abutting lots.

8.6.3.1.2 Temporary holiday lighting not to exceed 20 days per holiday event

8.6.3.1.3 Emergency lighting such as used by the Police, Fire Department, or other government official or utility emergency personnel.

8.6.3.1.4 Temporary lighting used on construction sights. The construction lights should be limited to the hours during which construction is permissible under the zoning ordinance.

8.6.3.1.5 Lighting during special events such as festivals fairs, celebrations, or concerts that are either sponsored by the City of Gloucester or have received authorization from the City.

8.6.3.1.6 Warning and alarm lights that alert to a malfunction or emergency situation.

8.6.3.1.7 Search lights for emergency situations of less than 24 hours duration

8.6.3.1.8 The illumination of outdoor recreational facilities such as but not limited to playing fields, pools, rinks, tennis courts, driving ranges, ski areas, or skateboard parks

8.6.3.2 Any outdoor luminaire or outdoor illuminated sign that was in existence prior to (Date of Ordinance Adoption) shall be exempt from the standards established by this section, until such time as the luminaire or sign is replaced or redesigned. Replacement of a luminaire or sign shall be considered to include replacing a mounting arm, reflector, hardware, wiring, and/or sign structure. Replacement of any bulb used in a luminaire or sign will not by itself be considered a replacement of such luminaire or sign.

#### 8.6.4 Standards Pertaining to Luminaires

8.6.4.1 Any luminaire with a lamp or lamps rated at a total of 1800 or more initial lumens shall utilize full cut-off fixture design and shall be installed in a horizontal orientation.

8.6.4.2 Any wall-mounted (wall-pack) luminaire with lamp or lamps rated at a total of 1800 or more initial lumens shall utilize full cut-off fixture design.

8.6.4.3 Freestanding and wall-mounted luminaires shall not exceed thirty-five (35) feet in height.

8.6.4.4 Light trespass onto residential property is prohibited, except for lights associated with street, roadway or public safety lighting.

8.6.4.5 Luminaires shall be designed and maintained so that the average illumination levels for general parking and pedestrian areas and vehicle use areas, when a commercial or industrial use is open for business, will not exceed the following levels, as derived from the National Energy Marketers Association:

**Level of Activity      Foot Candles on Illuminated Pavement – Average**

**General Parking and Pedestrian Areas**

<b>High</b>	<b>3.6</b>
<b>Medium</b>	<b>2.4</b>
<b>Low</b>	<b>0.8</b>

**Vehicle Use Areas**

<b>High</b>	<b>2.0*</b>
<b>Medium</b>	<b>1.0</b>
<b>Low</b>	<b>0.5</b>

High: major regional shopping centers, malls, athletic events

Medium: community shopping centers, transportation parking lots, office parks

Low: neighborhood shopping, industrial employee parking

\* Level of 2.0 footcandles = 2 lumens per square foot, and 2.0 footcandles are 239 times brighter than a full moon.

**Recommended high pressure sodium bulb lighting levels, or equivalent lumens, for use with full cut-off shielding:**

Side streets, lanes and courts in primarily residential areas: 35- 50 watts/3-4000 lumens.

Busier streets in residential, and commercial/ residential mixed-use areas: 50- 75 watts/4000+ lumens

Heavily used traffic, commercial, recreation or pedestrian safety areas:  
100 watts/9600 lumens

When a commercial or industrial use is closed for business, illumination levels for general parking or pedestrian areas shall be reduced from the above specified levels to a partial level required for security. For any activity not addressed by this section, luminaires shall be designed and maintained so that the average illumination level does not exceed the average illumination level published for such activity by the IESNA Handbook.

8.6.4.6 No luminaire shall be installed or maintained so that its light output is aimed, directed, or focused at pedestrians or operators of boats or motor vehicles.

8.6.4.7 External illumination of displays, buildings, and architectural or landscape features shall be performed with a luminaire or luminaires rated at a total of less than 2000 initial lumens. Lighting shall be specifically targeted at particular architectural or landscape features, and shall not project beyond such features.

#### 8.6.5 Standards Pertaining to Illuminated Signs

8.6.5.3 No off-premises illuminated signs are allowed.

8.6.5.4 Except as provided in section 8.6.5.4.1 and section 8.6.5.4.2, externally illuminated signs shall be illuminated from the top pointing downward (luminaires mounted from below the sign are not permitted).

8.6.5.4.1 Building-mounted façade signs may be illuminated from the bottom of the sign under the following conditions:

- (a) The sign must be mounted on the building at least eight (8) feet above ground level (as measured from the bottom of the sign), but below the roof-line;
- (b) Only fluorescent tube lighting with concentric metallic opaque shielding is allowed; and
- (c) The luminaire or luminaires must be shielded to direct the light onto the sign only with no projection beyond the building face.

8.6.5.4.2 Uplighting of externally lighted signs is prohibited except for illumination of the United States Flag, a building façade or a public monument. For any uplighting, the luminaire shall be equipped with shields as necessary. It shall be focused directly at the area of the target and shielded so that the lamp is not visible from the street or abutting lots.

8.6.5.5 The fixtures used to illuminate externally-illuminated signs must be fully shielded to prevent glare to pedestrian and vehicular traffic i.e. such fixtures must be designed to insure that motorists and pedestrians in the area do not have a direct view of the light source.

8.6.5.6 The average illumination level of the surface of an externally illuminated signs shall not exceed 20 footcandles for white or light colored backgrounds, and 50 footcandles for black or dark-colored backgrounds.

8.6.5.7 Box signs (luminous element signs) shall utilize a dark (density) translucent or opaque background color (not white) with lighter (color or density, not clear or transparent) translucent or opaque lettering, and/or graphics.

8.6.5.8 Internally lighted signs shall not exceed the following peak levels of illuminance.

<u>Areas of Application</u>	<u>Luminance – lumens/ square foot</u>
Low brightness areas/dark surroundings	20
Lighted facades & fascia signs	30
Community and neighborhood commercial areas	55
Bright fascia signs as in shopping centers	80

8.6.5.9 Animated or motion signs are prohibited.

#### 8.6.6 Verification of Compliance

The owner of any lot or property on which a luminaire or sign subject to this ordinance is located or proposed to be located shall have the burden of demonstrating that the existing or proposed luminaire or sign complies with the standards established by this section. The manufacturer's specification sheet may be used to establish the lumen level of a luminaire and, if required, to verify the use of full cut-off fixture design. Illumination levels may be verified through the use of manufacturer's photometric data sheet and /or photometric site drawing, or through on site calibrated light level meter readings.

#### 8.6.7 Enforcement

- a. The provisions of this chapter shall be administrated and enforced by the administrator.
- b. The administrator is authorized and empowered to institute and maintain, in the name of the city, any and all enforcement proceedings seeking injunctive relief and any other appropriate remedy. In the alternative, this ordinance may be enforced by ticketing through non-criminal disposition as provided in Massachusetts General Laws, Chapter 40D, Section 21D.