

## ARTICLE 4.09 OUTDOOR LIGHTING

### Sec. 4.09.001 Compliance required

All outdoor lighting fixtures and installations in the city shall conform to the following provisions. (Ordinance 2001-025 adopted 11/20/03; 2006 Code, sec. 151.60; Ordinance 2016-014, sec. 151.60, adopted 4/21/16)

### Sec. 4.09.002 Definitions

For the purpose of this article, the following definitions shall apply, unless the context clearly indicates or requires a different meaning:

***Bulb.*** A light-emitting device or a structure containing a light source. This includes but is not limited to a lamp.

***Correlated color temperature.*** The specification of the color appearance of light emitted by a lamp, relating its color to the color of light from a reference blackbody source when heated to a particular temperature, measured in degrees Kelvin (K).

***Diffusing lens.*** A translucent enclosure which surrounds a light source and through which there can be seen no semblance of an image of the light source. To provide a sufficiently wide distribution of light, a lens meeting this definition shall have a minimum cross-section, as seen from any angle, of not less than 0.125 square inch per lumen of enclosed light source emission.

***Efficacy.*** As an engineering term, the emission of light by a light source expressed in lumens per watt. In the absence of manufacturers' ratings, or at the discretion of the city, the efficacy and light emission of lamps shall be calculated as follows:

- (1) Common tungsten incandescent: 12 lumens per watt;
- (2) Halogen incandescent: 18 lumens per watt;
- (3) Metal halide: 82 lumens per watt;
- (4) High pressure sodium: 82 lumens per watt;
- (5) Fluorescent tubes: 75 lumens per watt; and
- (6) LED: 50-150 lumens per watt.

***Fixture.*** An outdoor lighting assembly containing one or more lamps and including any lenses, reflectors, and shields designed to direct the light in a defined manner.

***Footcandle.*** As an engineering term, a unit of light intensity equal to one lumen per square foot, which applies to the brightness of light on a surface or at a point in space.

***Full horizontal cut-off fixture.*** A fixture that confines the light entirely below a horizontal plane running through the lowest of: the lowest point from which light is emitted, or the lowest part of any lens, or the lowest point of any specular reflector.

***Glare.*** The effect of light shining directly in the eyes such as occurs when there is a line of sight to the light source.

***Initial lumens.*** The manufacturer-specified number of lumens of light generated by a lamp at the beginning of its service lifetime, not accounting for losses associated with lamp age.

***Lamp.*** A light-emitting device or a structure containing a light source. This includes but is not limited to a bulb.

***Light source.*** Any device or element which emits light.

***Light string.*** Any number of bulbs connected with wire in a linear or 2-dimensional array, not contained in the structure of a fixture, used either for illumination or decoration, and supported in any manner.

***Light trespass.*** Any horizontal or vertical illumination on a property from light sources on another property that exceeds 0.1 footcandles on a residential or unzoned district or 0.5 footcandles on a nonresidential district. The measurement shall be made 4 feet above the ground at a point 4 feet inside the property line.

***Lighting installation.*** All outdoor lighting fixtures and light sources on a property.

***Line of sight.*** As it applies to the visibility of a light source, a straight unobstructed line from any point on a property 4 feet or more above the ground to a light source on another property.

***Lumen.*** As an engineering term, a unit of light flux, which applies to the amount of light emitted by a lamp.

***Lumens per acre.*** The total number of initial lumens produced by all lamps utilized in outdoor lighting on a

***Specular reflector.*** A reflector which has a mirror-like surface that reflects an image (no matter how imperfect or distorted) of a light source.

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.61; Ordinance 2016-014, sec. 151.61, adopted 4/21/16)

#### **Sec. 4.09.003 Penalty**

Failure to correct a duly noticed violation of this article shall be punishable by a fine in accordance with the general penalty provided in [section 1.01.009](#) of this code for each day of violation that occurs after 30 days following the date of notification. (Ordinance 2001-025 adopted 11/20/03; Ordinance 2004-007 adopted 3/18/04; 2006 Code, sec. 151.99; Ordinance adopting 2018 Code)

#### **Sec. 4.09.004 Shielding, spectrum and curfews**

(a) Any fixture installed in the city, including municipally owned streetlights, having total light emission in excess of 1,500 initial lumens shall be shielded in a manner that:

(1) Confines the light so that it falls entirely on a wall or sign, or confines the light entirely below a horizontal plane at the level of the lowest of: the lowest point of the fixture at which light is emitted, the lowest part of any lens, or the lowest point of any specular reflector; and

(2) Prevents a line of sight from any point off the property on which the fixture is situated to a light source, its surrounding non-diffusing lens, or a specular reflector within or incidental to the fixture.

(b) No property in the city shall have fixtures that are not included in or do not conform to subsection (a), which collectively have total light emission exceeding 7,200 initial lumens.

(c) No fixture may be installed employing a lamp whose correlated color temperature exceeds 3000 Kelvins.

(d) New street lighting installed after the effective date, other than fixtures at the intersection of roadways, shall utilize half-night photocells or timers to turn off the lights halfway between dusk and dawn.

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.62; Ordinance 2016-014, sec. 151.62, adopted 4/21/16)

#### **Sec. 4.09.005 Site lumen limits**

(a) The total outdoor light output (excluding municipally owned streetlights used for illumination of public rights-of-way and outdoor recreation facilities) in both shielded and unshielded fixtures on any nonresidential property in districts RA, R-1 to R-5, MF-1, MF-2, NS and unzoned tracts where a residence exists shall not exceed 20,000 initial lumens per net acre, or 40,000 initial lumens per net acre in other districts and unzoned tracts, in any contiguous illuminated area. These lumen per net acre values are upper limits and not design goals; design goals should be the lowest levels that meet the requirements of the task.

(b) Total outdoor light output (excluding municipally owned streetlights used for illumination of public rights-of-way and outdoor recreation facilities) in unshielded fixtures on any nonresidential property in districts RA, R-1 to R-5, MF-1, MF-2, NS and unzoned tracts where a residence exists shall not exceed 6,000 initial lumens per net acre, or initial 15,000 lumens per net acre in other districts and unzoned tracts, in any contiguous illuminated area.

(Ordinance 2016-014, sec. 151.63, adopted 4/21/16)

#### **Sec. 4.09.006 Redirection and removal of adjustable fixtures and bulbs**

(a) **Redirection.** Any fixture existing on the effective date of this article which does not conform to [section 4.09.004](#) of this code and which can be re-aimed shall be re-aimed in a manner that reduces the degree of noncompliance so it fully conforms with [section 4.09.004](#).

(b) **Removal.** A light string that does not conform to [section 4.09.004](#) shall be removed, or the number of bulbs reduced sufficiently to comply with [section 4.09.004](#).

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.63; Ordinance 2016-014, sec. 151.64, adopted 4/21/16)

#### **Sec. 4.09.007 Illumination**

(a) Limitation per fixture. The maximum illumination on any outdoor surface or object, including signs, from all fixtures or light sources, whether installed before or after the effective date of this article, including lighting of externally illuminated and internally illuminated signs, shall not exceed:

- (1) Six footcandles in districts RA, R-1 to R-5, MF-1, MF-2, NS and unzoned tracts where a residence exists;
- (2) Eighteen footcandles in other districts and unzoned tracts where a business exists and is open; or
- (3) Three footcandles in other districts and unzoned tracts where a business is closed or does not exist.

(b) Measurement.

- (1) On any surface, except signs, the maximum illumination shall be measured at the point of highest illumination but no closer than 6 feet from the center of the nearest fixture.
- (2) On any surface of an externally illuminated sign, the maximum illumination shall be measured at the center of the sign.
- (3) On any surface of an internally illuminated sign, the maximum illumination shall be measured at the point of highest illumination.
- (4) On any surface illuminated by an internally illuminated sign, the maximum illumination shall be measured at the point of highest illumination, but no closer than 6 feet from the center of the sign.

(c) Re-lamping. Any fixtures existing on the effective date of this article which do not conform to this section, which require lamp replacement and which will support lamps of lower emission, shall be re-lamped with lower emission lamps in order to:

- (1) Achieve compliance with this section; or
- (2) Approach compliance with this section to the greatest possible degree.

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.64; Ordinance 2016-014, sec. 151.65, adopted 4/21/16)

#### **Sec. 4.09.008 Prohibited lighting forms**

The installation or replacement of a mercury arc or mercury discharge lamp of any size or kind is prohibited. (Ordinance 2001-025 adopted 11/20/03; 2006 Code, sec. 151.65; Ordinance 2016-014, sec. 151.66, adopted 4/21/16)

#### **Sec. 4.09.009 Removal of nonconforming fixtures**

Nonconforming fixtures, except those of a public entity, existing within the city on the effective date of this article, shall be removed or disconnected no later than seven years from the effective date. Any change of use of a property, or renovations to the structures on a property constituting more than 25% of their value, shall result in the removal or replacement of any nonconforming fixtures on those structures. (Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.66; Ordinance 2016-014, sec. 151.67, adopted 4/21/16)

#### **Sec. 4.09.010 Replacement of fixtures; conformance required**

Any fixture that is replaced, whether or not it conforms to this article, shall be replaced only with a fixture that conforms to all provisions of this article. (Ordinance 2001-025 adopted 11/20/03; 2006 Code, sec. 151.67; Ordinance 2016-014, sec. 151.68, adopted 4/21/16)

#### **Sec. 4.09.011 New public outdoor lighting restricted; modification of lighting causing public hazard or nuisance**

(a) The city may install new public outdoor lighting, including street lighting and lighting on other public property and rights-of-way, after the effective date only upon the determination of the city

be effectively mitigated through the use of outdoor lighting.

(b) Notwithstanding the provisions of [section 4.09.009](#), the city may require the modification or removal or limited operation of lighting fixtures found to be a public hazard or public nuisance according to the following criteria:

(1) Criteria for finding illumination to be a public hazard:

(A) Light trespass or glare which is sufficiently intense or contrasts excessively with surrounding illumination, regardless of the intensity of the surrounding illumination, in a manner to cause impairment of visual performance or to distract from or impair the safe operation of a vehicle; or

(B) Light trespass or glare that impairs a person's visual performance or ability to avoid obstacles in his or her path.

(2) Criteria for finding illumination to be a public nuisance:

(A) Light trespass or glare that deprives an owner or occupant of usual and reasonable use and enjoyment of a property;

(B) A high frequency or duration of periods when light trespass or glare is sufficient to interrupt or interfere with usual and reasonable use and enjoyment of a property; or

(C) Light trespass or glare that causes visual discomfort or impairment of visual performance in a manner that deprives any citizen of the city from the usual and reasonable enjoyment of a property.

(c) Benefit to the general public welfare may be found to mitigate a finding of a public nuisance but may not be found to mitigate a finding of a public hazard.

(Ordinance 2001-025 adopted 11/20/03; 2006 Code, sec. 151.68; Ordinance 2016-014, sec. 151.69, adopted 4/21/16; Ordinance adopting 2018 Code)

#### **Sec. 4.09.012 Exceptions**

The city may grant an exception to some of the provisions of this article for certain fixtures if the city finds the exception to be in the interest of public health, safety, and welfare and under the following conditions:

(1) For the illumination of city streets, parking lots, areas of public activity, and yard security, a nonconforming fixture which is granted an exception may be installed and the fixture and its light shall be exempt from the provisions of [sections 4.09.004](#), [4.09.007\(a\)\(3\)](#), and [4.09.009](#) of this code except as set forth below, if:

(A) No alternative lighting design or location using fully conforming fixtures is reasonably applicable to the physical conditions of the site, and the asserted need for a nonconforming fixture is not solely for the purpose of achieving an illumination level in excess of the provisions of [section 4.09.007\(a\)\(3\)](#) of this code;

(B) A fully conforming fixture with or without auxiliary shielding is unavailable from manufacturers of fixtures or is unavailable for mounting on a pole of the public electric utility;

(C) The fixture has a full horizontal cut-off design, and has total light emission not exceeding 8,500 initial lumens;

(D) A fixture is mounted no higher than:

(i) Sixteen feet above the ground when mounted on a privately owned pole; or

(ii) The lowest point consistent with public electric utility requirements when mounted on a pole which is the property of the public electric utility.

(E) No excepted fixture is located closer to another such fixture on one or separate properties than a distance equal to 3 times the average mounting height of the fixtures, nor closer to property lines of adjoining or facing residential property than a distance equal to 2 times the height of the fixture above

- (F) No more than one excepted fixture is located on a residential property;
- (G) No more than 2 excepted fixtures are located on a nonresidential property for security purposes where there is no nighttime public activity;
- (H) The maximum illumination due to all fixtures on the ground or any other surface does not exceed 6 footcandles;
- (I) The light from all excepted fixtures conforms to the provisions of [section 4.09.004\(a\)\(2\)](#) and [4.09.004\(c\)](#) of this code so far as it affects any adjoining residential property; and
- (J) The lighting illuminates the flag of any state or nation, provided that:
  - (i) Flagpoles illuminated from below are limited to a height of 25 feet above ground level, and are illuminated with a single spot-type fixture whose maximum initial output is 75 lumens per foot of height, measured from the light fixture to the top of the flagpole. The fixture must be mounted so that the lens is perpendicular to the flagpole.
  - (ii) Flagpoles illuminated from above utilize a single light fixture, not to exceed 800 initial lumens, attached to the top of the flagpole or a fixture mounted above the top of the flagpole on a structure within 15 feet of the flagpole.
- (2) Decorative light strings displayed during the seasonal holiday period from November 1 to January 15 of the next year are exempt from the provisions of this article.

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2003-009 adopted 12/4/03; 2006 Code, sec. 151.69; Ordinance 2016-014, sec. 151.70, adopted 4/21/16)

**Sec. 4.09.013 Applicability; administration and enforcement**

- (a) All lighting installations or additions to lighting installations made after the original effective date of this article shall conform to this article and shall be subject to inspection by the building official or his or her designee.
- (b) An outdoor lighting plan shall be included as part of the documentation for a permit application. The outdoor lighting plan shall show the bulb type and electric power of all proposed and existing outdoor bulbs and fixtures in the lighting installation, and provide sufficient detail with respect to location, height, and aiming and shielding of the fixtures to demonstrate that the proposed lighting installation complies with this article.
- (c) If the building official or his or her designee finds that an outdoor lighting fixture does not comply with this article, the owner shall be notified and shall be allowed 30 days from the date of the notification to remedy the noncompliance or to demonstrate that a violation does not exist.
- (d) This article shall not be construed to require or allow any act which is prohibited by any other ordinance or code provision.

(Ordinance 2001-025 adopted 11/20/03; Ordinance 2004-007 adopted 3/18/04; 2006 Code, sec. 151.70; Ordinance 2016-014, sec. 151.71, adopted 4/21/16)