

**Sponsor (Name or Committee):**

Planning Board

**Article Contact (Name, Title, Email, Phone):**

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**Article Title:**

Zoning Bylaw Amendment - Exterior Lighting Bylaw

**Article (Warrant Language):**

**ARTICLE XX.** To determine whether the Town will vote to delete Section 7.7.3.11 (Lighting) of the Town's Zoning Bylaw entirely and renumber the following sections accordingly, and add a new Section 7.13 (Exterior Lighting), or take any other action relative thereto:

**7.13 EXTERIOR LIGHTING**

**7.13.1 Definitions:** For the purpose of this Section, the following definitions shall apply:

**7.13.1.1 Correlated Color Temperature (CCT):** A specification of the color appearance of the light emitted by a light source, measured in Kelvin (K).

**7.13.1.2 Environmentally sensitive area:** Any conservation land held by the Natural Resources Commission or non-profit land trust, land subject to a conservation restriction, agricultural land, or any land that contains threatened or endangered species habitats.

**7.13.1.3 Foot-candle:** One (1) foot-candle (fc) is defined as enough light to uniformly illuminate one square foot with one (1) lumen.

**7.13.1.4 Fully shielded:** An outdoor luminaire constructed so that, in its installed position, all the light emitted by the luminaire is projected below the horizontal plane that passes through the lowest light-emitting part of the luminaire.

**7.13.1.5 Glare:** The sensation produced by a luminaire within the visual field with sufficient intensity to cause annoyance, discomfort, or loss in visual performance and visibility. The magnitude of the sensation of glare depends on factors such as the size, position, and luminance of the source.

**7.13.1.6 Illuminance:** Density of luminous flux (the rate of transfer of energy) incident on a surface, often measured on horizontal or vertical surfaces in foot-candles (fc or lumens/ft<sup>2</sup>).

**7.13.1.7 Lamp:** The bulb or other light-emitting portion of a luminaire, not including any reflective or refractive optics used to direct light.

**7.13.1.8 Light pollution:** Any adverse effect of manmade/artificial lighting at night including glare, light trespass, and skyglow.

**7.13.1.9 Light trespass:** Any light emitted by a luminaire that shines beyond the property on which the luminaire is located.

**7.13.1.10 Lumen:** A unit that measures light energy generated by a light source. For the purposes of this Section, the lumen output shall be the initial lumen output of a lamp, as rated by the manufacturer.

**7.13.1.11 Luminaire:** A complete lighting assembly, consisting of a lamp, housing, optic(s), and other structural elements, but not including any mounting pole or surface.

**7.13.1.12 Skyglow:** A measurable glow in the night sky deriving from an artificial source.

### **7.13.2 Applicability :**

The provisions of this Section shall apply to projects requiring site plan review as specified in Section 4, Table I Principal Use Regulations, and Section 11.8 Site Plan Review.

### **7.13.3 Administration :**

Projects subject to Site Plan Review shall be required to submit a lighting plan unless the requirement is waived by the Planning Board. All lighting plans shall include the following information:

- (a) Location, orientation, and type of any luminaires to be installed including details of the height of the pole and base.
- (b) Luminaire manufacturer specifications that include lamp type, lumen output, correlated color temperature (CCT) and type of lamp, such as metal halide, compact fluorescent, LED or high-pressure sodium.
- (c) Photometric plan showing the intensity of illumination expressed in foot-candles.
- (d) Evidence that light trespass onto any street or abutting lot will not occur in excess of 0.5 foot-candles within 25 feet beyond the lot line. This may be demonstrated by manufacturer's data, cross-section drawings, or other means.

### **7.13.4 General Requirements:**

- (a) All luminaires shall be fully shielded to prevent light pollution and protect environmentally sensitive areas from light trespass.
- (b) All luminaires shall be of fully shielded design and shall not emit any direct light above a horizontal plane passing through the lowest part of the light-emitting luminaire.
- (c) All luminaires shall be equipped with whatever additional shielding, lenses, or cutoff devices are necessary to eliminate light trespass onto any street or abutting property and to eliminate glare perceptible to persons on any street or abutting property.
- (d) Light trespass onto abutting property is prohibited, except for light associated with street, roadway or public safety lighting, unless waived as part of Site Plan Review under Section 11.8.
- (e) Correlated color temperature for any lamp shall not exceed 2,700K.
- (f) New lighting shall be LED or equivalently sustainable.

(g) Illumination levels shall be limited to what is needed for visibility and safety. Illuminance resulting from all non-residential lighting installations shall conform to the relevant edition of the recommended practices of the Illuminating Engineering Society of North America current at the time of installation.

(h) All non-residential site lighting shall be turned off no later than one hour after close of business and turned on no earlier than one hour before the business opens. Low-level lighting sufficient for the security of persons or property may be in operation at any time provided the illumination on the ground at any location is not greater than 2 foot-candles.

#### **7.13.5 Exemptions :**

(a) All luminaires lawfully in place prior to the effective date of this Section shall be allowed to remain. A noncompliant luminaire and/or associated mounting pole shall not be permitted to be relocated, replaced, or modified unless it is in compliance with Section 7.13.

(b) Municipal Lights: Municipal street lighting, lights that control traffic or other municipal lighting for public safety on Town streets and ways are exempt from this Section.

#### **Article Explanation:**

Concord's current lighting bylaw is extremely limited in its scope and only applies to off-street parking and loading areas. The proposed bylaw amendment expands the scope of the zoning bylaw to cover exterior lighting for all projects subject to Site Plan Review. The bylaw amendment follows the contemporary DarkSky Massachusetts model lighting bylaw along with several other Massachusetts communities with more comprehensive lighting bylaws. Creating a more robust lighting bylaw section and a better framework for dealing with exterior lighting in town is a step toward addressing issues and concerns of light pollution, protecting natural habitats, and preserving Concordians' view of the night sky.

#### **Motion (if known at time of submission):**

[Insert proposed motion language, if available.]