

This document has been reformatted and the technical clarifications recommended by staff and included in the final version of the proposed draft ordinances (both the Zoning Ordinance & Code of Ordinance) have been highlighted. Clarifications are intended to better align the proposed amendments with the intent as discussed during review by stakeholders and committees and do not change the standards of the amendment.

## ZONING TEXT AMENDMENT – OUTDOOR LIGHTING STANDARDS

### Article VI. - General Provisions

#### **Section 6-19. Lighting.**

Intent. The purpose of these standards is as follows:

- a) Minimize adverse offsite impacts of lighting such as light trespass and obtrusive light.
- b) Curtail light pollution, reduce skyglow and improve the nighttime environment.
- c) Help protect the natural environment from the adverse effects of artificial lighting at night.
- d) Conserve energy and resources to the greatest extent possible.

**6-19-1. General Standards of Applicability.** The lighting standards of this section shall be applicable as follows:

- a) Non-residential uses shall be subject to these standards. For the purposes of these standards non-residential shall include, but not be limited to, commercial, institutional, educational, industrial, etc.
- b) Multi-family residential uses shall be subject to these standards. For the purposes of these standards multi-family residential shall include all residential uses with three or more attached dwelling units.
- c) Residential uses shall be exempted from these standards. For the purposes of these standards, residential uses shall include all single family & two-family residences.
- d) Street and roadway lighting shall be exempt from these standards. Street and roadway lighting are subject to the standards of the City of Hendersonville Code of Ordinances (Chapter 46, Article VI).
- e) For the purposes of these standards the term “stream buffer” shall refer to the term as defined in Section 17-3 of this ordinance.
- f) All new exterior lighting fixtures and site lighting installed, after the effective date of this Ordinance and within the zoning jurisdiction of the City of Hendersonville, shall comply with the standards established in Sections 6-19.2., 6-19.3. and 6-19.4. unless exempted.

### **6-19-2. Lighting Fixture Standards**

- a) Lighting fixtures shall be designed with an uplight rating of U0 per IES TM-15 and designed to limit Backlight trespass.
- b) New floodlights shall be prohibited. Replacement area lighting shall be shielded to prevent uplight and to prevent front, side, and/or back light depending on the implications on surrounding properties.
- c) All wall pack lights shall be full cutoff and shielded.
- d) The following applications are exempted from 6-19-2 (a), (b) & (c), all other standards of Section 6-19 shall apply:
  - i. flagpoles
  - ii. sports facilities
  - iii. temporary construction sites
  - iv. correctional facilities
  - v. lighting used solely for signage (see sign regulations)
  - vi. temporary lighting as needed under emergency conditions
  - vii. low voltage landscape lighting
  - viii. temporary holiday lighting
  - ix. ornamental and architectural lighting of/for:
    - 1. bridges
    - 2. public monuments
    - 3. statuary
    - 4. church spires, belfries, cupolas and domes not intended for human occupancy
    - 5. structures individually listed or within a National Register Historic District
    - 6. public buildings
- e) The nominal CCT of lighting fixtures shall be  $\leq 4,000\text{K}$
- f) The CRI of lighting fixtures shall be  $\geq 70$ .

### **6-19-3. Site Lighting Standards**

- a) Lighting levels and placement shall be designed in accordance with applicable 2020 Illuminating Engineers Society (IES) Lighting Library Standards Collection recommended practices.
- b) The maximum light level using maintained lumens shall be no more than 0.5 foot candles for a non-residential to residential/multi-family residential use interface at ground level of the property line.
- c) The maximum light level using maintained lumens shall be no more than 0.25 foot candles for a multi-family residential-to-residential use interface at ground level of the property line.

- d) The maximum light level using maintained lumens shall be no more than 0.0 foot candles for a non-residential/multifamily residential to stream buffer interface at ground level of the edge of the stream buffer.
- e) No lights shall be installed within a Stream Buffer except as described below. Lighting may be permitted within a Stream Buffer only where facilities exempted under Section 17-3-5 are located and shall be oriented to minimize light intrusion within the Stream Buffer.
- f) For the purposes of this section maintained lumens shall mean L80 or 80% of initial lumens.
- g) Sites with compliant lighting plans shall be deemed compliant with these standards when the fixtures are installed as shown on an approved lighting plan as to type, orientation, location, height, shielding and rating of fixtures.
- h) A lighting plan is not required to take into account lighting sources external to the site.

#### **6-19-4. Existing Exterior Lighting.**

Non-compliant lighting installed prior to the effective date of this ordinance shall be considered non-conforming and may continue to be used in accordance with the non-conforming standards found in Section 6-2-5 with the following exception:

- a) Amortization. On or before [INSERT 10 YEARS FROM EFFECTIVE DATE], all exterior lighting shall comply with this Code.

### **Section 6-2. - Nonconformities**

#### **6-2-5 Nonconforming Exterior Lighting.**

The following applies to existing non-compliant lighting installed prior to [adoption date of ordinance].

Full compliance with the lighting requirements in Section 6-19 shall be required under the following circumstances:

- a) When repairing or replacing 50% or more of total existing exterior lighting fixtures on a site within any 12-month period; provided however any replacement of a floodlight shall be required to meet the standards of section 6-19-2(b).
- b) When expanding or improving 50% or more of an existing parking or lighted area. Examples of activities that would trigger compliance under 6-2-5(b) include; paving an unpaved parking lot, adding 20 additional parking spaces to an existing 40 space lot or adding bio-retention facilities to 12 spaces in a 20 space lot. Examples of activities that would not trigger compliance include; repaving an existing paved lot, reorganizing spots within an existing lot or adding 10 spaces to an existing 25 space lot.
- c) When structures on a site with non-conforming lighting are renovated and the total cost of renovations exceeds 50% of the assessed value of the building according to Henderson County tax records.

## **Section 6-13. - Nuisances**

### **6-13-4 Lighting.**

Lighting facilities, if provided, shall be aimed, directed, shielded or arranged ~~so the light sources for such facilities do not cause undue glare on neighboring properties or interfere with the safe use of public rights of way~~ to mitigate off-site lighting trespass to surrounding properties.

## Article VII Development Review

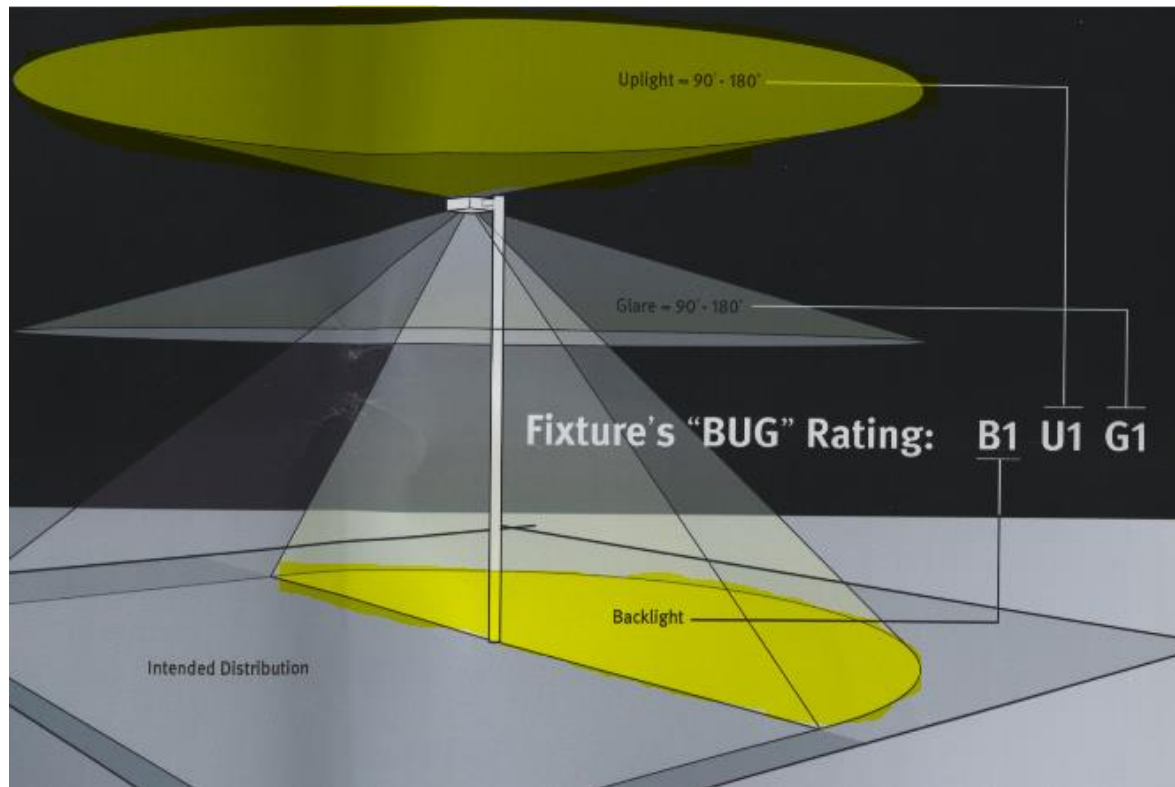
### **7-3-4.3 Contents of Final Site Plan.**

r) Site Lighting Plan conforming with the standards established in Section 6-19. Such plan shall include proposed fixture list including type, orientation, location, height, shielding and rating of fixtures, footcandle map, property lines and stream buffers at a minimum.

## Article XII. – Definition of Terms

Uplight – For an exterior light fixture, light output emitted into the hemisphere above the horizontal plane of the light emitting light opening (i.e. above 90 from straight down) (see Figure 1)

Backlight – For an exterior light fixture, light output emitted into the lower rear quarter sphere behind the fixture and opposite the intended aiming direction of the fixture. For a light fixture with a symmetric light output pattern, the backlight is the same as the forward light. (see Figure 1)



*Figure 1 (provided by International Dark Sky Association & Illuminating Engineering Society)*

Lumen - The unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption).

Maintained Lumens - The lumen output remaining, at a selected operating time, expressed as a percentage of the initial lumen output of a fixture.

Footcandle (FC) - A unit of measure of the intensity of light falling on a surface, equal to one lumen per square foot

Correlated Color Temperature (CCT) - A description of the color appearance of a light source in terms of warmth (lower temperatures) or coolness (higher temperatures), as measured on the Kelvin (K) scale (i.e. High Pressure Sodium 2200K, Metal Halide 3000-4200K, moonlight 4100K)

Color Rendering Index (CRI) - A method to describe the effect a light source (from 0 poor to 100 best) has on the observer's ability to differentiate the true color of objects being illuminated (High Pressure Sodium 27, Metal Halide 65-80, LED 70-90, sunlight 100)

Illuminating Engineering Society (IES) – Established in 1906, the IES is the recognized technical and educational authority on illumination. Their mission is to improve the lighted environment by bringing together those with lighting knowledge and by translating that knowledge into actions that benefit the public.

## Chapter 46 – Streets, Sidewalks, and Other Public Places

### Article VI – Street Lights

#### **Sec. 46-184. – Definitions**

Whenever and wherever used in this article the following words and names shall have the following meanings:

**Public Roadway or Highway and Sidewalk Lighting** shall mean lighting provided for freeways, expressways, limited access roadways, and roads on which pedestrians, cyclists, and parked vehicles are generally not present. The primary purpose of roadway or highway lighting is to help the motorist remain on the roadway and help with the detection of obstacles within and beyond the range of the vehicle's headlights.

**Public Street and Sidewalk Lighting** shall mean lighting provided for boulevards, major & minor thoroughfares, and local roads where pedestrians and cyclists are generally present. The primary purpose of street lighting is to help the motorist identify obstacles, provide adequate visibility of pedestrians and cyclists, and assist in visual search tasks, both on and adjacent to the roadway.

**Public Ornamental Street and Sidewalk Lighting** shall mean a luminaire intended for illuminating streets that serves a decorative function in addition to providing optics that effectively deliver street lighting. It has a historical period appearance or decorative appearance, and has the following design characteristics:

- Designed to mount on a pole using an arm, pendant, or vertical tenon;
- The top shall be capped or opaque, while the sides shall be translucent;
- An optical aperture that is either open or enclosed with a flat, sag or drop lens;
- Mounted in a fixed position.

#### **Sec. 46-185. – Applicability**

The provisions of this article shall apply to all public streets and sidewalks except where pre-empted by federal, state or other superseding jurisdiction.

#### **Sec. 46-186. - Light Shielding and Distribution**

All street lighting shall have no light emitted above 90 degrees with the following exception:

- a) Ornamental street lighting shall be permitted on all public streets and sidewalks.