

10-12-43: OUTDOOR LIGHTING REQUIREMENTS:

A. Purpose And Intent: The purpose and intent of this section is to protect and preserve the existing dark sky characteristics of Elk Ridge, as provided for in the general plan by:

1. Reducing, eliminating, or preventing light trespass;
2. Reducing, eliminating, or preventing unnecessary or inappropriate outdoor lighting;
3. Reducing, eliminating, or preventing the effects of outdoor lighting on wildlife;
4. Preventing unsightly and unsafe glare;
5. Promoting energy conservation;
6. Maintaining nighttime safety, utility, and security;
7. Encouraging a minimal light footprint of land uses in order to reduce light pollution.

B. General Requirements:

1. Conformance With All Applicable Codes: All outdoor lighting shall be installed in conformance with the provisions of this section, applicable Electrical Codes, and applicable sections of the Building Code.

2. Applicability: Except as described below, all outdoor lighting installed after the effective date of this section, shall comply with these requirements.

The following are not regulated by this section:

- a. Lighting for public monuments and statuary.
- b. Temporary lighting for theatrical performances, projection screens, performance areas, and construction sites.
- c. Underwater lighting used for illumination of swimming pools and decorative water fountains.
- d. Temporary lighting and seasonal lighting provided that individual lamps are less than seventy (70) lumens.
- e. Emergency lighting used by police, firefighting, medical personnel, and maintenance of utilities and public infrastructure may be used under emergency conditions.
- f. Residential construction permitted prior to March 27, 2018.

3. Exceptions: The following shall take precedence over this section:

- a. Lighting specifically required by Federal, State, or County laws or regulations.
- b. Lighting allowed by special use permit.

C. Residential Lighting: New residential construction shall meet the following requirements:

1. Exterior Lighting: All exterior structure lighting shall be fully shielded either by the design of the light fixture or by the architectural features of the structure. Lighting that results in light trespass is prohibited.

2. Upward Lighting: Upward lighting illuminating a structure may illuminate the walls and under the eaves but shall not be directed to illuminate beyond the eaves.

3. Eave Lighting: Eave lighting shall be fully shielded and downward directed. Angled eave lighting that directs light beyond the face of the eave is prohibited. Eave lighting shall not create excessive glare due to reflective surfaces on the structure.

4. Flood Lighting: Flood lighting is permitted meeting the following requirements:

- a. Shall be downward directed targeting a specific area on the subject property, with no light extending beyond the subject property boundary.
- b. Flood lighting luminaires shall be shielded and aimed so that direct glare is not visible from adjacent properties.
- c. Flood lighting shall be installed with a motion or vacancy sensor, where lights shut off no more than fifteen (15) minutes after an area is vacated.

5. Landscape Lighting: Landscape lighting is permitted meeting the following requirements:

- a. Landscape lighting shall be directed inward, away from the subject property boundary.
- b. Landscape lighting of trees, plants, ponds or other ornamental features shall not extend illumination beyond the feature it is intended to illuminate.

D. Public Facilities/Commercial Lighting: All proposed public facilities and commercial development requiring exterior lighting shall submit to the City as part of the design package lighting layout drawings including but not limited to the types of lights proposed with specifications, location of lights including height, and photometric analysis (lighting coverage).

1. Hardscape Lighting: All hardscape areas (parking, corridors, lobbies, etc.) of non-residential properties, common areas associated with residential properties, and public parking facilities shall comply with the following subsections. This section is not applicable to public recreation facilities with hard surfaces.

a. Total Site Lumen Limit: The total installed lumens of all outdoor lighting shall not exceed the total site lumen limit. The total site lumen limit shall not exceed two (2) lumens per square foot. The area is measured by the total outdoor hard surface area that shall be lit. This ratio shall be calculated by combining the total lumen output of each artificial light source divided by the square footage of the parking lot area.

b. Height Of Luminaries: Poles shall be sized in such a manner that the top of the luminary does not exceed fifteen feet (15') above adjacent grade.

c. Light Trespass Standard: All luminaries, including security lighting shall be aimed and shielded so that the direct illumination shall be confined to the property boundaries of the source.

d. Canopy Lighting: All direct artificial light sources shall be sufficiently recessed so as not to project direct light greater than five feet (5') from the outside perimeter of the canopy, and shall not produce more than a ratio of eight (8) lumens per square foot of canopy area. This ratio shall be calculated by combining the total lumen output of each artificial light source and dividing by the square footage of the canopy.

2. Softscape Lighting: All softscape areas (play grounds, yards, open space, etc.) of non-residential properties, common areas associated with residential properties, and public facilities shall comply with the following subsections. For the purpose of this section, trails and sidewalks less than ten feet (10') in width can be considered in the softscaped area. This section is not applicable to public recreation facilities with soft surfaces.

a. Outdoor Luminaries: All outdoor luminaries shall be fully shielded and shall not exceed one thousand six hundred (1,600) lumens.

b. Flood Lighting: Flood lighting is permitted meeting the following requirements:

- (1) Flood lighting luminaires shall be shielded and aimed so that direct glare is not visible from adjacent properties.
- (2) Flood lighting shall be installed with a motion or vacancy sensor, where lights shut off no more than fifteen (15) minutes after an area is vacated.

c. Landscape Lighting: Landscape lighting is permitted meeting the following requirements:

- (1) Low voltage landscape lighting shall not exceed five hundred twenty five (525) lumens.
- (2) Landscape lighting of trees, plants, ponds or other ornamental features shall not exceed one thousand six hundred (1,600) lumens and shall not leave trespass beyond the feature it is intended to illuminate.

3. Recreation Facilities: All public recreation facilities shall have an approved lighting design applicable to the type of facility and must comply with the requirements of this section.

a. Lighting must not exceed the limits in subsection E, "Prohibited Lighting", of this section.

b. The lighting shall not exceed a ratio of ten (10) lumens per square foot of recreation activity area. This ratio shall be calculated by combining the total lumen output of each artificial light source divided by the square footage of the recreation activity area. And shall be lit only when the area is in use.

c. The lighting for the recreation activity area shall only be directed onto the area where the recreation activities are occurring. It shall not be allowed to illuminate surfaces that are not essential to the function of the recreation activity.

4. Light Curfew: Except for residential uses, all outdoor lighting shall be turned off by ten o'clock (10:00) P.M., or, if applicable, within one hour after the close of business, whichever is later, except the following:

- a. Lighting to illuminate the entrance of the building;
- b. Safety lighting of parking lots and pedestrian areas;
- c. Lighting necessary for after-hours business.

E. Prohibited Lighting: The following lighting systems are prohibited from being installed or used:

- a. Temporary or permanent lighting in which any single luminary exceeds twenty thousand (20,000) initial lumens or the total lighting load exceeds one hundred sixty thousand (160,000) lumens.
- b. Aerial lasers.
- c. Searchlights.

- d. Street lights.

F. Signage Lighting:

1. Lighting Requirements:

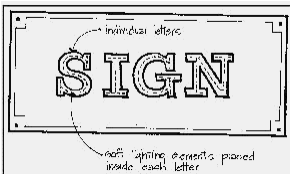
- a. Externally lit signs shall be illuminated only with steady, stationary, shielded light sources directed solely onto the sign without causing glare.
- b. Light bulbs or lighting tubes used for illuminating a sign shall not be visible from adjacent public rights-of-way or residential properties.
- c. External illumination for signs shall conform to all provisions of this section.
- d. The intensity of sign lighting shall not exceed that necessary to illuminate and make legible a sign from the adjacent travel way or closest right-of-way; and the illumination of a sign shall not be obtrusive to the surrounding area.
- e. The fixtures used to illuminate signs shall not be directed toward nearby residential properties.
- f. Internally illuminated signs are permitted in certain circumstances as follows:
 - (1) Individual back-lit letters which are silhouetted against a softly illuminated wall (see illustration 43-1 of this subsection);

ILLUSTRATION 43-1



- (2) Individual letters with translucent faces, containing soft lighting elements inside each letter (see illustration 43-2 of this subsection); and

ILLUSTRATION 43-2



- (3) Metal-faced box signs with cut-out letters and soft-glow fluorescent tubes (see illustration 43-3 of this subsection).

ILLUSTRATION 43-3



- g. Fluorescent lights shall be allowed for indirect illumination when placed in such a manner that the light tubes are not exposed to view from the public right-of-way or sidewalk.
- h. A sign may be illuminated during the hours of operation of the facility being identified or advertised or until eleven o'clock (11:00) P.M., whichever is later.
- i. Such signs shall provide an automatic timer to comply with the intent of this section.
- j. Illumination of off-premises signs is prohibited, except in the case of off-premises kiosks which are subject to the provisions of this Code.
- k. Ground-mounted sign lighting is not permitted for freestanding signs on poles, where open space is visible from the bottom of the sign to the ground. The Director may approve ground-mounted lighting for freestanding signs which are constructed in such a way that no open space is visible from the bottom of sign to the ground (such as solid base, landscaping).
- l. All ground-mounted lights shall be placed in such a manner that the angle of the lamp shall not be greater than forty five degrees (45°) measured from a horizontal plane to a line projected through the center of the lamp, and fixtures shall be fully shielded to contain and direct the light onto the sign only. All upward-directed sign lighting is prohibited.

G. Definitions:

COMMON AREAS: One or more of the following:

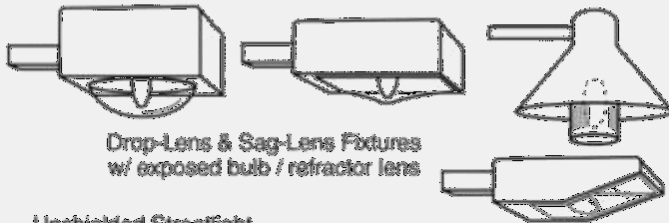
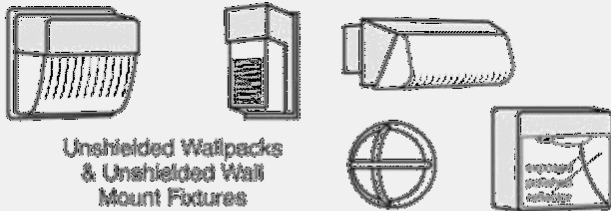
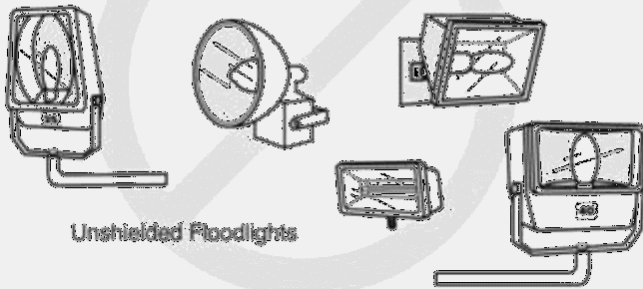
- 1. A parking lot.
- 2. Common entrance or public space shared by all occupants of the domiciles.

CURFEW: A time defined by the authority when outdoor lighting is reduced or extinguished.

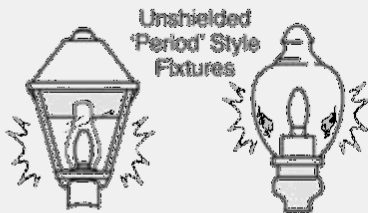
FULLY SHIELDED: A luminary constructed and installed in such a manner that all light emitted by the luminary, either directly from the lamp or diffusing element, or indirectly by reflection or refraction from any part of the luminary, is projected below the horizontal plane through the luminary's lowest light-emitting part.

Unshielded

Fixtures that produce glare and light trespass

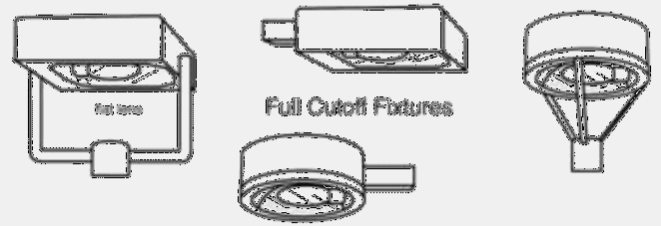


Unshielded Streetlight

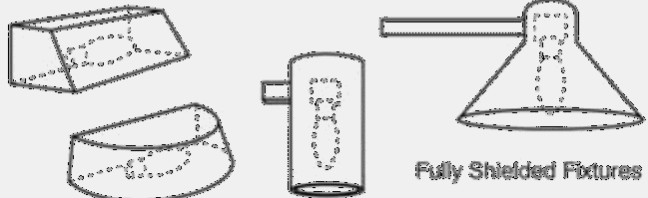


Fully Shielded

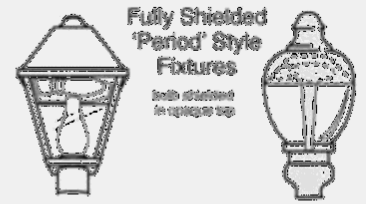
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



Fully Shielded Wallpack & Wall Mount Fixtures



Full Cutoff Streetlight



GLARE: Lighting entering the eye directly from luminary or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.

HARDSCAPE: Permanent hardscape improvements to the site, including but not limited to, parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways, and non-vegetated landscaping that is greater than ten feet (10') in width. Materials may include concrete, asphalt, stone, gravel, etc.

HARDSCAPE AREA: The area of all hardscape. It is used to calculate the total site lumen limit.

IESNA: Illuminating Engineering Society of North America.

LANDSCAPE LIGHTING: Lighting of trees, shrubs, or other plant material as well as ponds, flagpoles, and other landscape features. Does not include signage.

LIGHT POLLUTION: Any adverse effect of artificial light including but not limited to, glare, light trespass, sky-glow, energy waste, compromised safety and security, and impacts on the nocturnal environment.

LIGHT TRESPASS: Light that falls beyond the property it is intended to illuminate.

LOW VOLTAGE LANDSCAPE LIGHTING: Landscape lighting powered at less than thirty (30) volts and limited to luminaries having a rated initial luminaire lumen output of five hundred twenty five (525) lumens or less.

SKYGLOW: The brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Skyglow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.

TEMPORARY LIGHTING: Lighting installed and operated for periods not to exceed sixty (60) days, completely removed and not operated again for at least thirty (30) days.

WATTS TO LUMENS: Incandescent lighting has traditionally been considered in watts, a unit for measure of the power required to provide light. With the advent of LED lighting the industry has moved toward measuring the actual light output. Lumens are a standard unit for measuring light output. The following table provides a conversion to help visualize a rough equivalent of lumens versus watts. Please note as an example that one thousand six hundred (1,600) lumens can be reached as one (1) 100-watt bulb or two (2) 60-watt bulbs. Due to variance in incandescent bulbs four (4) 40-watt bulbs may in some cases equal one thousand six hundred (1,600) lumens. A seventy five (75) watt equivalent bulb may have a range of nine hundred (900) to one thousand two hundred (1,200) lumens.

| Watts (Energy Usage) | Lumens (Light Output) |
|----------------------|-----------------------|
| 40 | 450 |
| 60 | 800 |
| 75 | 1,100 |
| 100 | 1,600 |