

Article 25 - Outdoor Lighting and Road Glare Ordinance

25.1 Purpose and Intent

The purpose and intent of this ordinance are as follows:

- A. To encourage systematic practices in the use of outdoor electrically powered luminaries, consistent with conserving energy and maximizing the benefits to the citizenry;
- B. To increase nighttime utility, safety, security, and productivity; to foster the nighttime use of property; and to protect the privacy of residents;
- C. To reduce light trespass, obtrusive light, and sky glow; and to reduce roadway glare and extreme variations of illumination, to which elderly drivers are particularly sensitive;
- D. To preserve and enhance the natural nighttime visual environment of Cherokee County;
- E. To preserve the views of the starry sky, encouraging the enjoyment of their aesthetics, the education of the public in the sciences, and the astronomical study of celestial bodies; and
- F. To accomplish these purposes by limiting illuminance levels; by directing the luminaire emissions away from roadways, other properties, and the sky; and by reducing illumination levels during later hours of the night.

25.2 Definitions

BEACON: A light with one or more beams directed into the atmosphere or directed at one or more points not on the same property as the light source; also any light system with one or more beams that rotate or move.

CUTOFF: A luminaire light distribution where the emission does not exceed 2.5 percent of the lamp lumens at an angle of 90 degrees above nadir, and does not exceed 10 percent at a vertical angle of 80 degrees above nadir. These emission values apply to all lateral angles around the installed luminaire.

FOOTCANDLE: A unit of measure for illuminance on a surface that is everywhere one foot from a point source of light of one candle, and equal to one lumen per square foot of area.

FULL CUTOFF: A luminaire light distribution where zero emission occurs at all angles of 90 degrees or greater above nadir, and the emission does not exceed 10 percent of total lamp lumens at a vertical angle or 80 degrees above nadir. These emission values apply to all lateral angles around the installed luminaire.

GLARE: The sensation produced within the visual field by luminance that is sufficiently greater than the luminance to which the eyes are adapted, causing annoyance, discomfort, or loss in visual performance and visibility.

ILLUMINANCE: The quantity of light arriving at a surface divided by the area of the illuminated surface, measured in footcandles. Horizontal illuminance applies to a horizontal surface; vertical illuminance applies to a vertical surface. Average illuminance is the level of illuminance over an entire illuminated target area. Maximum illuminance is the highest level of illuminance on any point within the entire area; minimum illuminance is the lowest level of illuminance on any point within the entire area.

ILLUMINANCE LEVELS: All illuminance levels and foot candles noted in this ordinance mean the maintained illuminance levels: the illuminance levels occurring just prior to lamp replacement and luminaire cleaning. The average illuminance level applies to an entire illuminated target area. Minimum and maximum illuminance levels apply to small areas within the entire illuminated target area. Unless otherwise noted, illuminance levels refer to horizontal illuminance levels.

LAMP: The component of an outdoor luminaire that produces light.

LIGHT TRESPASS: Unwanted light emitted beyond the boundaries of the property on which the luminaire is located, detrimentally affecting residents, vehicle operators and pedestrians, the natural environment, and astronomical observations.

LUMINAIRE (LIGHT FIXTURE): A complete fixed or movable lighting unit consisting of a lamp or lamps and ballasting (when applicable) together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

PERSON: Any individual, tenant, lessee, owner, or any commercial entity, including, but not limited to, a firm, business, partnership, association, joint venture, corporation, or organization, whether commercial, religious, fraternal, social or otherwise, or any agent thereof.

ROADWAY LIGHTING: Lighting that is specifically intended to illuminate roadways for automobiles, excluding the lighting intended to illuminate roadways only for pedestrians.

SECURITY LIGHTING: Continuous illumination of non-roadway territory when there is no/minimal nighttime activity by authorized individuals.

SEMI-CUTOFF: A luminaire light distribution where the emission does not numerically exceed 5 percent of the total at an angle of 90 degrees above nadir, and 20 percent at a vertical angle of 80 degrees above nadir. These values apply to all lateral angles around the installed luminaire.

SHIELDED: provided with internal and/or external shields, top and side visors, hoods, and internal louvers to limit glare, sky glow, and light trespass caused by emission from luminaires.

SKY GLOW. The brightening of the nighttime atmosphere by light emitted above the horizontal plane and by light reflected upward from illuminated surfaces, which reduces the visibility of astronomical objects.

UNIFORMITY RATIO: A higher level of illumination in relation to a lower level of illumination within a given target area. A value for either the maximum-to-minimum ratio or the average-to-minimum ratio may be required. For example, if the average-to-minimum uniformity ratio is 4:1

for the given target area, the lowest level of illuminance is no less than 1 divided by 4 (25%) of the average level of illuminance.

25.3 Light Trespass

A. All luminaires, except street lighting and those used on one- or two-family dwellings, shall be located, designed, fitted, aimed, shielded, installed, and maintained to limit illumination only to the target and to minimize light trespass. The designed illuminance for pavement or ground shall be provided by a luminaire installed closer than four times the luminaire height. Directional luminaires such as floodlights, wall pack lights, and spotlights shall be aimed so that the center of the beam is not more than 62 degrees above nadir. Directional luminaires shall be shielded as needed for minimizing misdirected light.

B. Vertical illumination from luminaires on any single property shall not exceed 0.1 footcandles at a height of three feet at a property line of a residential zoning district or a nature-preserve type park; and shall not exceed 0.5 footcandles at a property line of other types of property, except where a greater illumination at the property line is due to luminaires on that property.

25.4 Glare Control on Roadways

A. GLARE FROM LUMINAIRES.

It shall be unlawful to place or maintain on private property any luminaire of such intensity or brilliance within the field of view of a driver so as to impair his/her vision upon the public roadway, or to interfere otherwise with the operation of a motor vehicle. Every reasonable effort shall be made to ensure that the brilliance of any luminaire less than ten (10) degrees from a passenger car driver's line of sight; either along the roadway ahead or toward each traffic control device, sign, or signal; does not exceed the brilliance of a headlight on an oncoming passenger car whose extended center line lies 10 feet to the driver's left, when the car is between 60 and 100 feet from the driver, and when the lowermost distribution of light from the headlight is in use."

B. REFLECTED SOLAR GLARE

No building of more than one story, on which glass constitutes more than one quarter of a side, shall be constructed, until the orientations for the glass have been selected which will avoid sunlight reflections within ten degrees of the driver's field of view upon any public roadway. The orientations for the glass shall account for the bearing and altitude angles of the sun at all times of day on all days of the year.

25.5 Luminaire Source Types Regulated

A. All following luminaire source types and wattages shall be subject to this ordinance:

1. All metal halide, fluorescent, and mercury vapor
2. High pressure sodium: exceeding 35 watts
3. Low pressure sodium: exceeding 18 watts
4. Incandescent and quartz-halogen: exceeding 100 watts

B. Filtering of Source Types:

Mercury vapor, fluorescent, and metal halide lamps shall be installed in luminaires enclosed by acrylic, translucent material, or glass which filters out ultraviolet light; quartz glass does not qualify.

25.6 Restrictions of Various Outdoor Lighting Applications**A. PARKING AREAS**

1. All luminaires shall be the full cutoff type, except for large areas, such as those used primarily for the parking of trucks or buses, where luminaire supports inside the areas would restrict the function or compromise safety. Shielded floodlights shall be used for these areas. The height of the luminaires shall be not greater than 35 feet, except for large areas in outdoor recreational facilities.
2. Examples of levels of activity for outdoor parking uses are described as follows:
 - a. HIGH LEVEL OF ACTIVITY
Regional shopping centers containing retail space of 300,000 square feet or greater;
Fast food facilities with customer seating of 40 or greater
Entertainment theaters, assembly, sports arenas;
Major cultural or civic events
Major league athletic events
Truck or bus parking
Automatic teller machines
Fueling stations, except drive-under canopies and pump islands
Automotive dealerships;
 - b. MEDIUM LEVEL OF ACTIVITY
Community shopping centers containing retail space of 5,000 to 299,999 square feet
Cultural, civic or recreational events
Office parks
Hotels and motels
Hospital parking
Transportation parking (airports, commuter lots, etc.)
Residential complex parking
 - c. LOW LEVEL OF ACTIVITY
Neighborhood shopping centers containing retail space of less than 5,000 square feet
Industrial employee parking
Restaurants other than fast food
Educational facility parking
Parking at houses of religious assembly
All other levels of activity than high and medium
3. The maximum allowable maintained horizontal illuminance values on pavement are indicated for the applicable level of activity. The maximum allowable uniformity ratios are indicated.

a. Level of Activity: General Parking, Bikeways & Pedestrian Traffic

Minimum footcandles	Uniformity Ratio (Average to minimum)	
HIGH	0.9	4:1
MEDIUM	0.6	4:1
LOW	0.2	4:1

b. Level of Activity: Vehicle Use Area Only

Average footcandles	Uniformity Ratio (Average to minimum)	
HIGH	2.0	3:1
MEDIUM	1.0	3:1
LOW	0.5	4:1

B. OUTDOOR ADVERTISING SIGNS AND OTHER SIGNS

1. Any externally illuminated outdoor advertising sign erected subsequent to the effective date of this ordinance shall be illuminated from the top. Vertical illuminance shall not exceed 55 footcandles.
2. In the event that any sign is rendered nonfunctional by damage, the lighting shall be made to conform to this ordinance when the function of the sign is restored.
3. The source of light for signs shall be effectively shielded from adjacent residential properties and streets. Illumination shall not exceed 0.5 footcandles measured in a vertical plane above a height of 5 feet at a residential property line or right-of-way.
4. Flashing, blinking, rotating, or moving objects on signs, caused by either electrically powered illumination or solar reflection, within a distance of 150 feet of a street, are prohibited.

C. ROADWAY LIGHTING AND STREET LIGHTS

1. Illumination levels shall comply with the Cherokee County Street Light Ordinance.
2. All luminaires except those within residential areas shall be the full cutoff type.
3. For period or historical type luminaires, only the cutoff and semi-cutoff types are allowed.

D. DRIVE-UNDER CANOPIES AND PUMP ISLANDS AT FUELING STATIONS

In order to limit adaptation problems of the eyes of drivers while leaving a bright area and entering a dark area, the average horizontal illuminance on the pavement shall not exceed 5 footcandles under a canopy where all adjacent roadways have no street lights, and shall not exceed 10 footcandles under a canopy where an adjacent roadway has street lights. The luminaire shall be recessed into the canopy ceiling so that the bottom of the luminaire does not extend below the ceiling.

E. OUTDOOR RECREATIONAL FACILITIES.

Illumination shall be provided by full cutoff luminaires, except for large areas, where luminaire supports inside the areas would restrict the function or compromise safety. Examples of such large areas include, but are not limited to, baseball, softball, soccer, football, and golf driving ranges. Shielded floodlights shall be used for these areas. Smaller areas, including tennis,

volleyball, racquetball and handball courts, and swimming pools shall utilize full cutoff luminaires and shall conform to the requirements of this ordinance regarding light trespass. The average illuminance on ground shall not exceed 50 footcandles.

F. CONSTRUCTION, MANUFACTURING, REPAIR, LOADING AND UNLOADING PLATFORMS, AND ACTIVE STORAGE YARDS

Illumination for these facilities shall be provided by full cutoff luminaires, except for particularly large areas, such as a trucking terminal for which luminaire supports would restrict the function or compromise safety. Shielded floodlights shall be used in these areas. The average illuminance on pavement or ground shall not exceed 10 footcandles.

G. OUTDOOR DISPLAY LOTS AND CAR DEALERSHIPS

Any light source permitted by this ordinance may be used for lighting of outdoor display lots such as, but not limited to, automobile sales or rental, recreational vehicle sales, or building material sales. Illumination shall be provided by full cutoff luminaires. The maximum allowable illuminance values on pavement for car dealerships are listed in the following table.

Table of Illuminance Levels and Uniformities for Car Dealerships

Area	Maximum Illuminance on Pavement (footcandles)	Maximum to Minimum Ratio
Main Business Districts (major corridors)		
Front Row (Adjacent to roadway), and feature	20	5:1
Other rows	10	10:1
Entrances	10	5:1
Driveways	3	10:1
Secondary Business Districts (or activity centers)		
Front Row (Adjacent to roadway), and feature	10	5:1
Other rows	5	10:1
Entrances	5	5:1
Driveways	2	10:1

H. LANDSCAPE, DECORATIVE, AND ARCHITECTURAL LIGHTING

1. Luminaires used to illuminate flags, statues, steeples, monuments, and other tall narrow objects shall be illuminated with the type of luminaire that directs the narrowest beam capable of illuminating the object. Illuminance at the level of the illuminated object shall not exceed 10 footcandles.
2. Lighting on buildings for aesthetic purposes shall be directed downward from the top. Exception: selected portions of a building may be illuminated from below, if the portions illuminated total less than half of the vertical face. The average illuminance shall not exceed 10 footcandles.

3. All outside illumination of any building and/or surrounding landscape, public or private, for esthetic, architectural, or decorative purposes is prohibited after 11:00 P. M. or when the business closes, whichever is later.

I. SECURITY LIGHTING AND TIME RESTRICTIONS

1. Full cutoff luminaires shall be used for all security lighting and dusk-to-dawn area lighting.
2. The maximum level of illumination on areas used for outdoor sales and display, eating, parking, assembly, service, storage of equipment and freight, loading and unloading, repair, maintenance, commercial activities, and industrial activities shall not continue after 11:00 P. M., nor more than one hour after active use of the area ceases, if later.
3. The number of luminaires remaining on for security lighting shall not exceed one fourth the total number of each type of luminaire used for the maximum level of illumination; after dividing the total number by four, any remainder is counted as a whole number.
4. No outdoor recreational facility shall be illuminated after 11:00 P. M. except to conclude a scheduled recreational or sporting event in progress prior to 11:00 P. M. The luminaires shall be extinguished after outdoor recreational events are completed and the site has been vacated.
5. Automatic timing devices that control the hours of illumination may remain on Eastern Standard Time throughout the year.

K. TOWER LIGHTING

White strobe lights shall not be operated on towers later than one hour after sunset nor prior to one hour before sunrise, except in conditions required by the Federal Aviation Administration. Red lights shall be used on towers only where required by the Federal Aviation Administration.

25.7 Prohibited Lights

- A. Promotional beacons, search lights, laser source lights, strobe light, or any similar high-intensity light, when projected above the horizontal.
- B. Series, lines, or rows of lights, whether supported by cables or other physical means, within a distance of 150 feet of a roadway.
- C. Lighting used for causing sky glow to attract attention, in excess of the lighting used to provide safety, security, and utility.

25.8 Approved Materials and Methods

A. The provisions of this ordinance are not intended to prevent the use of any design, material or method of installation or operation not specifically prohibited herein, provided any such alternate has been approved by the Community Development Director. The Community Development Director may approve any such proposed alternate provided he/she finds that it:

1. Provides approximate equivalence to the applicable specific requirements of this ordinance; and
2. Is otherwise satisfactory and complies with the intent of this ordinance.

25.9 Permits and Development Plan Reviews

A. This ordinance section shall be implemented as a condition of approving development projects.

B. Whenever a person is required to obtain a building or electrical permit for outdoor lighting or signage, subdivision approval, or approval of any residential, commercial, industrial, mixed use subdivision plan, or any land development plan approval by the County, including all County projects, the applicant shall, as a part of said application, submit sufficient information to enable the Community Development Director to determine whether the proposed outdoor lighting will comply with this ordinance. Submission of plans and evidence of compliance shall include the following:

1. A site plan indicating the layout of proposed luminaire locations;
2. An impact statement demonstrating that the proper steps have been taken to ensure no negative impact upon the community and its residents. This statement shall include a plan showing the location and use of adjacent properties;
3. Manufacturer's catalog cuts that provide a description of the luminaires, including wattage, lumen output, glare reduction/control devices, lamps, on-off cycle control devices, and mounting devices.
4. Mounting heights and aiming angles with photometric data showing the angle of cut-off of light emissions for the proposed luminaires;
5. Maintained horizontal illuminance shown as footcandles, after depreciation.
 - a. Maximum.
 - b. Minimum.
 - c. Average, during operating and non-operating hours.
 - d. Maximum to minimum uniformity ratio.
 - e. Average to minimum uniformity ratio.
6. In areas where more than half of the maximum allowable illumination footcandle values listed in this ordinance are applied for: a photometric grid, showing footcandle readings every 10 feet and the average footcandles, that demonstrates adequate illumination intensity and uniformity at ground level; and footcandle values measured three feet above ground level along the boundaries of the site where adjacent to a residential zoning district and a nature-preserve type park.
7. Supporting documentation when using recommendations by the Illuminating Engineering Society of North America, a professional engineer, a professional architect, or other authority on outdoor lighting.

8. Such other information as the Community Development Director may determine is necessary to ensure compliance with this ordinance.

C. If the Community Development Director determines that the proposed lighting does not comply with this ordinance, the permit shall not be issued or the plan approved.

D. For the approval of any multi-story building having over 25 percent exterior glass, submit documents showing that reflected sunlight at all times of the day and on all days of the year will be minimized in the directions that will cause glare on public roads.

25.10 Petitions For Street Lighting in Subdivisions Containing Lots Which Are 1.1 Acres in Size or Larger

A. The residents of a subdivision containing lots which are 1.1 acres in size or larger may request street lighting by submitting a petition to the Planning and Zoning Department of Cherokee County. This petition shall show a 75% support for the request by all residents whose properties are located, in whole or in part, within two hundred fifty (250) feet of a proposed street light.

B. The request shall include a location sketch indicating the individual siting of street lights within the subdivision, along with the residential location of each signatory to the petition.

C. It shall be the responsibility of the petitioners and homeowners within the subdivision to pay the initial, installation, and maintenance costs, including the standards/poles.

25.11 Temporary Lighting Permits

A. The Community Development Director may grant a permit for temporary lighting, which does not conform to the provisions of this ordinance, if he/she finds the following:

1. The purpose for which the lighting is proposed is not intended to extend beyond thirty (30) days, except that the permit for a major construction project may extend to completion.
2. The proposed lighting is designed in such a manner as to minimize light trespass, glare, and sky glow;
3. The proposed lighting will comply with the general intent of this ordinance;
4. The permit will be in the public interest, such as circus, fair, carnival, or civic uses.

B. The application for the Temporary Lighting Permit shall include the following information:

1. Name and address of applicant and property owner;
2. Location of proposed luminaire(s);
3. Type, wattage and lumen output of lamp(s);
4. Type and shielding of proposed luminaires;
5. Intended use of the lighting;
6. Duration of time for requested exemption;
7. The nature of the exemption;

8. Other information that the Planning Director may request.
9. Means to minimize light trespass, sky glow, and glare.

C. The Community Development Director will endeavor to rule on the application within five (5) business days from the date of submission of the request and notify the applicant in writing of his/her decision. The Community Development Director may grant one (1) renewal of the permit for an additional thirty (30) days if he/she finds that, because of an unanticipated change in circumstances, a renewal would be in the public interest. The Community Development Director is not authorized to grant more than one (1) temporary permit and one (1) renewal for a thirty (30) day period for the same property within one calendar year.

25.12 Variances

A. Any person may submit an application to the Zoning Board of Appeals for a variance from particular regulations. The application should include evidence about the following items:

1. How the proposed design and appearance of the luminaire are superior.
2. How sky glow, light trespass, and glare will be limited.
3. How the proposed solution will provide a benefit without negative impact on the health, safety, or welfare of the community.

B. The application may include the recommended practices of the Illuminating Engineering Society of North America, a professional engineer, a professional architect, or other authority on outdoor lighting.

C. The existence of a particular luminaire system in Cherokee County or in another jurisdiction prior to the effective date of this ordinance shall not constitute justification for a variance.

D. The County, at its discretion, may waive or grant a variance from specific requirements of this lighting ordinance.

25.13 Nonconforming Uses

A. Any construction permit that invokes Certificate of Occupancy requirements shall specify and require that any nonconforming lighting, located within the boundaries of the development site authorized by said permit, shall be brought into conformance with the provisions of this ordinance within five (5) years of the effective date of this ordinance.

B. Any change in zoning classification on which a nonconforming luminaire exists will require that the luminaire shall be made to conform to the provisions of this ordinance.

25.14 Exceptions

The following outdoor lights are exempt from all requirements of this ordinance:

A. Federal laws, state laws, rules and regulations, which shall prevail over the conflicting provision, so that the remaining portion of this ordinance shall be deemed to be of full force and effect.

- B. Outdoor luminaires existing and legally installed prior to the effective date of this ordinance, provided, however, that no change in use, replacement, structural alteration, or restoration of such luminaires, except for bulb replacement, shall be made unless it thereafter conforms to the provisions of this ordinance.
- C. Airport lighting that is required for the safe and efficient movement of aircraft during flight, takeoff, landing, and taxiing. All other outdoor lighting at airport facilities shall comply with the provisions of this ordinance.
- D. Emergency lighting by police, fire, ambulance, and rescue authorities.
- E. Lighting for meteorological data gathering purposes.
- F. Lamps producing light directly by the combustion of natural gas, kerosene, or other fossil fuels.
- G. Glass tubes filled with neon, argon, and krypton.
- H. Fluorescent tubes that are filtered to show a specific color: violet, blue, green, or yellow.
- I. Luminaires installed on, in, and connection with those facilities on land owned or operated by the federal government or the state of Georgia, or any department, division, agency or instrumentality thereof.
- J. Low-wattage fluorescent, quartz-halogen, and incandescent light sources used for holiday decorations.
- K. For non-residential properties, a total of luminaires not exceeding four per acre, or per lot that is smaller than one acre, of any combination of the following luminaire source types and wattages:
1. Fluorescent, 48-inch maximum length tube: not greater than 60 watts
 2. High pressure sodium: 50 watts
 3. Low pressure sodium: 35 watts
 4. Incandescent: not greater than 200 watts
 5. Quartz-halogen: 150 watts

25.15 Violations and Enforcement

- A. It shall be unlawful to install, erect, construct, enlarge, alter, repair, move, improve, convert, or operate an outdoor luminaire in violation of this ordinance.
- B. The County may require corrective action for any lighting installation that becomes nonconforming, due to damage or lack of maintenance.
- C. The County is authorized to order the modification of any luminaire that it finds to be a definite hazard or gross nuisance to the public, particularly a brilliant luminaire that causes objectionable glare to the users of a roadway.

25.16 Luminaires Funded by County

All outdoor lights funded by Cherokee County shall be installed in accordance with this ordinance. Funds include any bond revenues or any money appropriated or allocated by the Cherokee County Board of Commissioners.