

Night Sky Preservation Ordinance

Adopted August 7, 2000 by the Summerfield Town Council

(Note: Paragraph numbers refer to the areas of the universal development ordinance where individual paragraphs will be inserted).

1-3.11 Lighting Regulation Purpose

The purpose of this section is to regulate the placement, orientation, distribution and fixture type and size of outdoor lighting. It is the intent of this ordinance to preserve, protect, and enhance the lawful nighttime use and enjoyment of any and all property through the use of appropriate lighting practices and systems. Such individual fixtures and lighting systems are designed, constructed, and installed to: control glare and light trespass, minimize obtrusive light, conserve energy and resources while maintaining safety, security and productivity, and curtail the degradation of the nighttime visual environment by reducing light pollution.

2-1.14 Lighting Definitions

A. Outdoor Light Fixtures shall mean outdoor artificial illuminating devices, outdoor fixtures, lamps or other devices, permanent or portable, used for illumination, direction or advertisement. Such devices shall include, but are not limited to search, spot, or flood lights for:

- a. buildings and structures, including canopies and overhangs
- b. recreational areas
- c. parking lot lighting
- d. landscape lighting
- e. signs, including billboards, display and service areas, roadways and sidewalks

B. Installed shall mean the initial installation of outdoor light fixtures defined herein, following the effective date of this Section.

C. Shielded, Fully shall mean fixtures that are shielded in such a manner that light emitted by the fixture, either directly from the lamp or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted. This means that a fully shielded fixture is one used in such a way that it allows no direct or internally reflected light to shine above the light fixture.

D. Foot-candle. A quantitative unit of measure referring to the measurement of illumination incident at a single point. One foot-candle is equal to one lumen uniformly distributed over an area of one square foot. All references are to be considered horizontal foot-candles unless noted otherwise.

E. Full Cutoff. A light fixture which cuts off all upward transmission of light.

F. Lamp. The component of a luminaire that produces light. A lamp is also commonly referred to as a bulb.

G. Lumen. A standard unit of measurement referring to the amount of light energy emitted by a light source, without regard to the effectiveness of its distribution.

H. Luminaire. A complete lighting unit consisting of a lamp or lamps together with the components designed to distribute

the light, to position and protect the lamps, and to connect the lamps to the power supply. A luminaire is also commonly referred to as a fixture.

I. Photometric Plan. A point by point plan depicting the intensity and location of lighting on the property.

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

K. FDD lighting. High Intensity Discharge lighting, a family of bulb type including mercury vapor, metal halide, high pressure or low pressure sodium, which glow when electric current is passed through a gas mixture inside a bulb.

L. Light Trespass. Light projected onto a property from a fixture not located on that property.

6-6.1 Conformance with Applicable Codes and Ordinances

All outdoor artificial illuminating devices shall be installed in conformance with the provisions of this Section, and applicable provisions of the Development Ordinance and NC Building Code. Where there is conflict between the provisions of this Section and applicable provisions of the Development Ordinance, the most restrictive shall govern.

6-6.2 Approved Materials and Methods of Installation

The provisions of this Section are not intended to prevent the use of any equipment, material or method of installation not specifically prescribed by this Section provided the Zoning Board has approved the alternative. The Zoning Board may approve any such alternative provided that the proposed design provides the approximate equivalence to the specific requirements of this Section.

6-6.3 Shielding

All outdoor light fixtures including decorative luminaires except those exempted by Section 6-6.6 shall be fully shielded as identified in Section 6-6.5. A fully shielded fixture must be a foil cutoff luminaire and is defined as outdoor lighting that is shielded or constructed so that all light emitted is projected below a horizontal plane which is parallel to the ground, and runs through the lowest part of the fixtures.

6-6.4 Light Trespass

The maximum illumination at five (5) feet inside an adjacent residential use or zone area or public right-of-way, or beyond, from light emitted from an artificial light source are 0.5 horizontal footcandles and 0.5 vertical footcandles. Said illumination at 10 feet inside an adjacent commercial or industrial use or zone area or public roadway or beyond, shall not exceed 0.5 horizontal footcandles and 0.5 vertical footcandles. No line of sight to a bulb is permitted five (5) feet or more beyond a residential or public right-of-way property line by an observer viewing from a position that is level with or higher than the ground below the fixture. Compliance is achieved with fixture shielding, directional control designed into the fixture, fixture location, fixture height, fixture aim, or a combination of these factors.

6-6.5 General Requirements for all Zoning Districts

1. Public or Private Recreational Facilities: Where playing fields or other recreational areas are to be illuminated, lighting fixtures shall be specified in the Lighting Plan, mounted and aimed so that the illumination falls within the primary playing area and immediate surroundings. All playing fields except baseball fields shall have full cutoff

fixtures and the light source shall not be visible from other properties.

2. Signage. All illuminated signs, including billboards must be lighted internally or lighted by top mounted lights pointed down. No sign may be illuminated by fixtures not shielded from upward transmission of light. Signs should be white or light-colored lettering on dark backgrounds. Lights that flash, pulse, rotate, move, or simulate motion are not permitted.

3. All outdoor lighting fixtures, including display lighting and signs, shall be turned off after the close of business. However, fixtures nearest building entryways may remain lighted at minimum levels necessary for safety and security...

4. Aprons and Canopies: The lighting fixture bulbs shall be recessed into a canopy ceiling so that the bottom of the fixture is flush with the ceiling so that light is restrained to no more than 85 degrees from vertical. As an alternative to recessed ceiling lights, indirect lighting may be used where the light is directed upward and then reflected down from the underside of the canopy. In this case, light fixtures shall be shielded so that direct illumination is focused exclusively on the underside of the canopy. The lighting for such facilities (pump islands and under canopies) shall have a maximum of 15 footcandles average maintained illumination at grade.

5. All Parking Lots, Loading Areas, Display Areas, and Exterior Building Illumination. This lighting requirement applies to townhouse and multi-family, educational, institutional, commercial, recreation, public, commercial business and retail, motor vehicle related, wholesaling, and limited and general industrial use categories identified within the Development Ordinance. Lighting for these areas shall not exceed an average horizontal illumination level of 1 foot-candle at grade.

6. For new residential construction, fixtures must be fully shielded.

7. For communication tower lighting, the nighttime use of white lighting or white strobe lighting is prohibited, unless required by the FAA.

8. All existing lighting must be brought into compliance within five (5) years of the effective date of the Ordinance. When existing fixtures are changed or upgraded during this period, they must comply with the other sections of this Ordinance.

6-6.6 Exemptions

1. Lighting which is not subject to this chapter by state or federal law.

2. Fixtures including the following:

- Incandescent fixtures (other than floodlights or spotlights) less than 160 watts.
- Natural gas or Liquid Propane lights
- Any light source of 1800 lumens or less.

3. Security lighting on residential, agricultural, or commercial property that is controlled and activated by motion sensor devices for a duration of fifteen (15) minutes or less.

4. Lighting of the United States of America or State of North Carolina flags except that they are limited to a maximum of 4000 lumens.

5. Temporary circus, fair, carnival, or civic uses.

6. Special Conditions. The Zoning Board may grant an exemption to the requirements of Section 6-6.5 only upon a written finding that there are conditions warranting the exemption and that there are no conforming fixtures that would suffice.
7. Construction and Emergency Lighting. Lighting necessary for construction or emergencies is exempt from the provisions of this Section provided said lighting is temporary (one month or less) provided lighting does not create light trespass or hazardous glare.
8. Sports lighting is exempt from the foot-candle limitations of this ordinance on the playing field only. Glare control fixture design is required, and light trespass requirements apply.

6-6.7 Applications

Any person submitting a site plan or applying for a building, electrical or sign permit to install outdoor lighting fixtures except for single family detached residences shall as a part of said application submit evidence that the proposed work will comply with this Section. This evidence shall be in the form of a Lighting Plan and support documents prepared by an electrical engineer or lighting professional with Lighting Certified credentials.

The Lighting Plan and supporting documents shall include all of the items found in Appendix 2: Map Standards.

APPENDIX 2: MAP STANDARDS

1. A site plan drawn to scale showing building(s), landscaping, parking areas and proposed exterior lighting fixtures, Location of all post, canopy, supports and light fixtures, including the height of each fixture, for any building, structure, parking, display and loading areas; Specifications of the illuminating devices, lamps, supports, and other Devices, including designation as Illuminating Engineering Society of North America (IESNA) "cut-off¹ fixtures. This description may include but is not limited to manufacturers catalog cuts, and drawings including sections where required.
2. Plan shall show locations of all pole mounted and building mounted fixtures and a numerical 10 foot by 10 foot grid of lighting levels, (20 foot by 20 foot grid for parking lots and playing fields) in footcandles, both initial and maintained, that the fixtures will produce on the ground (photometric report). The photometric report will indicate the minimum, maximum, and average footcandle levels within the lighted area of the site. The average light level shall be determined by adding the footcandle value of all the points in the grid and dividing by the total number of points.
3. The Lighting Plan and supporting documents shall be sufficiently complete to enable the Zoning Board to readily determine whether compliance with the requirements of this Section will be secured. If such plans and descriptions cannot enable this ready determination, by reason of the nature or configuration of the devices, fixtures or lamps proposed, the applicant shall submit evidence of compliance by certified test reports as performed by a recognized testing lab.
4. Prior to issuance of a building, electrical or sign permit for any structure other than a single family detached residence or residential accessory building, the Zoning Board shall determine that the submitted plans and details for said permit are in conformance with this Section. The stamping of the plans and the signature of a Lighting Planner with Certified Lighting Credentials and the date of the signature shall indicate that the plans are in conformance.
5. For single family detached residences, the builder and the owner shall sign a document stating that the residential lighting on the property is in compliance with the ordinance. This document shall be kept by the Town of Summerfield as a public record.

6-6.7 Amendment to Permit for Lighting on Private Property

Should the applicant desire to substitute outdoor light fixtures or lamps to be installed on private property after a permit has been issued, the applicant shall submit all changes to the Zoning Board for approval, with adequate information to assure compliance with this Section.

6-6.8 Appeals

Except for street lighting within the right-of-way and for temporary exemptions as provided in Section 6-6.6, any applicant's appeal of the Zoning Board's decision shall be made to the Town Council.

6-6.9 Request for Temporary Exemptions

1. Request. Any person may submit a written request on a form prepared by the Zoning Board for a temporary exemption to the requirements of this Section.

The Request for Temporary Exemption shall contain the following information:

- a. Specific exemptions requested.
- b. Type and use of exterior light involved.
- c. Duration of time for requested exemption.
- d. Type of lamp and calculated lumens.
- e. Total wattage of lamp or lamps.
- f. Proposed location of exterior light.
- g. Previous temporary exemptions, if any.
- h. Physical size of exterior light and type of shielding provided.

In addition to the above data, the Zoning Board may request any additional information that would enable a reasonable evaluation of the Request for Temporary Exemption.

Appeal. The Zoning Board, within forty-five (45) days from the date of the properly completed Request for Temporary Exemption, shall approve or reject in writing the Request. If rejected, the individual making the Request shall have the right of appeal to the Town Council.

End of Ordinance Amendments.