

A RESOLUTION ADOPTING A STATEMENT
EXPLAINING THE BOARD OF ALDERMEN'S REASONS FOR ADOPTING AN
AMENDMENT TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE
Resolution No. 94/2009-10

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: AN ORDINANCE REVISING ARTICLE XV THE CARRBORO LAND USE ORDINANCE WITH RESPECT TO OUTDOOR LIGHTING STANDARDS

NOW THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

Section 1. The Board concludes that the above described amendment is consistent with Carrboro Vision 2020, policies 2.42, 2.51, 3.1, and 3.25

Section 2. The Board concludes that its adoption of the above described amendment is reasonable and in the public interest because the Town seeks to maintain its distinctive town character, support implementation of the Northern Study Area plan, minimize negative environmental impact, and improve lighting in the downtown and other areas.

Section 3. This resolution becomes effective upon adoption.

A RESOLUTION ADOPTING A STATEMENT
EXPLAINING THE BOARD OF ALDERMEN'S REASONS FOR REJECTING AN
AMENDMENT TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: AN ORDINANCE REVISING ARTICLE XV THE CARRBORO LAND USE ORDINANCE WITH RESPECT TO OUTDOOR LIGHTING STANDARDS

NOW THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

Section 1. The Board concludes that the above described amendment is not consistent with Town policies and regulations.

Section 2. The Board concludes that its rejection of the above described amendment is reasonable and in the public interest because existing regulations are appropriate.

Section 3. This resolution becomes effective upon adoption.

****DRAFT****

**AN ORDINANCE REVISING ARTICLE XV THE CARRBORO LAND USE
ORDINANCE WITH RESPECT TO OUTDOOR LIGHTING STANDARDS**

THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO ORDAINS:

Section 1. All references in this ordinance are to Chapter 15 of the Carrboro Town Code, the Carrboro Land Use Ordinance.

Section 2. The Title of Article XV of the Carrboro Land Use Ordinance is rewritten to read as follows:

**ARTICLE XV
WATER AND WASTEWATER, OUTDOOR LIGHTING, AND MISCELLANEOUS
UTILITIES
PART 1. WATER AND WASTEWATER**

Section 3. The Carrboro Land Use Ordinance is amended by rewriting Sections 15-242 and 15-243 to read as follows:

PART II. OUTDOOR LIGHTING

Section 15-242 Purpose and Intent

(a) The Board finds that outdoor lighting serves a number of beneficial purposes. For work or recreation, it enables people to see essential detail in order that they may undertake their activities at night. It facilitates the safety and security of persons and property, for example through lighting on roads and pathways and the entrances to buildings. It may be used to emphasize features of architectural or historical significance, and to light parks and gardens. It is used for advertising or display to promote products or services, or to call attention to commercial premises by means of area lighting or signs. However, excessive or inappropriately directed lighting may create unwanted glare, interfere with observation of the nighttime sky, waste valuable energy supply, and otherwise interfere with the use or enjoyment of adjoining or nearby public or private property.

(b) It is the intent of this part 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 by providing for the installation of individual fixtures and lighting systems that are designed and installed to maintain safety, security and productivity, and to curtail the degradation of the nighttime visual environment.

Section 15-242.1 Definitions

Unless otherwise specifically provided, or unless clearly required by the context, the words and phrases defined in this section shall have the meaning indicated when used in this part.

- (1) **Direct Light:** Light emitted directly from the lamp, off of the reflector diffuser, or through the refractor or diffuser lens, of a luminaire.
- (2) **Fixture:** The assembly that houses the lamp or lamps and can include all or some of the following parts: a housing, a mounting bracket or pole socket, a lamp holder, a ballast, a reflector or mirror, and/or a refractor or lens.
- (3) **Floodlight:** A form of lighting designated to direct its output more or less in a specific direction.
- (4) **Footcandle: (fc)** The total amount of light or illuminance cast on a surface and equivalent to the light produced by a source of one (1) candle measured at a distance of one (1) foot
- (5) **Full cut-off luminaires:** A luminaire designed and installed where no light is emitted at or above a horizontal plane running through the lowest point on the luminaire.
- (6) **Fully Shielded:** Outdoor light fixtures shielded by a solid barrier so that no light escapes through the barrier
- (7) **Glare:** Light emitting from a luminaire with an intensity great enough to reduce a viewer's ability to see, or cause annoyance and discomfort, and, in extreme cases, causing momentary blindness.
- (8) **IESNA:** Illuminating Engineering Society of North America, a non-profit society of professional lighting specialists that has developed a series of recommended standards for a variety of lighting applications.
- (9) **Lamp:** The component of the luminaire that produces the light and commonly referred to as the "bulb."
- (10) **Light Trespass:** The shining of light produced by a luminaire beyond the boundaries of the property on which it is located.
- (11) **Lumen:** The unit used to quantify the amount of light energy produced by a lamp at the lamp. Lumen output of most lamps is listed on the packaging. For example, a 60-watt incandescent lamp produces 950 lumens while a 55-watt low-pressure sodium lamp produces 8000 lumens.
- (12) **Luminaire:** A complete lighting system that includes light source and all necessary mechanical, electrical, and decorative parts.
- (13) **Maintained Foot Candle:** Illuminance of lighting fixtures adjusted for dirt buildup and lamp output depreciation.

- (14) **Wall Pack:** A type of light fixture typically flush-mounted on a vertical wall surface.

Section 15-242.2 Applicability

(a) The provisions of this part apply to developments for which permits are issued after the effective date of this part; therefore developments that exist on the effective date of this part that do not comply with its provisions shall not be regarded as nonconforming. However, when new luminaires are installed or existing luminaires are replaced, they shall comply with this part.

(b) Notwithstanding the provisions of subsection (a) of this section, luminaires installed prior to the effective date of this part that violate the following provisions shall be brought into compliance or removed within three months after the date of notification of the violation:

Section 15-242.5 (d).

(c) Regulations applicable to the lighting of signs are found in Article XVII of this chapter, particularly Section 15-281.

(d) The provisions of this part do not apply to:

- (1) Streetlights installed on public streets.
- (2) Traffic control signals and devices.
- (3) Temporary emergency lighting (i.e. fire, police, repair workers, etc.).
- (4) Moving vehicle lights.
- (5) Navigation lights (i.e. airports, heliports, radio/television towers, etc.).
- (6) Seasonal decorations with individual lights in place no longer than 60 consecutive days.
- (7) Security lights that are controlled by a motion-sensor switch that does not allow the lights to remain on longer than 12 minutes after activation, so long as the lamps do not exceed 150 watts and 2,200 lumens.

Section 15-242.3 Minimum Lighting Requirements for Security

(a) All streets, sidewalks, and other common areas or facilities in subdivisions shall be sufficiently illuminated to ensure the security of property and the safety of persons using such streets, sidewalks, and other common areas or facilities.

(b) All roads, driveways, sidewalks, parking lots, and other common areas or facilities in unsubdivided developments shall be sufficiently illuminated to ensure the security of property and the safety of persons using such roads, driveways, sidewalks, and other common areas or facilities.

(c) All entrances and exits in ~~substantial~~ buildings used for non-residential purposes and in multi-family residential dwellings containing more than four dwelling units shall be adequately lighted to ensure the safety of persons and the security of such buildings.

Section 15-242.4 Subdivisions

(a) With respect to street lighting for subdivision streets that (i) are located on property within the town at or about the time of final plat approval, and (ii) are intended to be dedicated to the town, the developer shall coordinate with the electric utility company to ensure that all facilities necessary for the installation of street lights in accordance with the town's street lighting policy are put in place. "As a condition of construction plan approval, all public street lighting is to be installed by the developer prior to street acceptance by the town. The developer shall be responsible for all installation cost and monthly billing until the public streets are accepted onto the town's street maintenance system."

(b) With respect to street lighting for subdivision streets that (i) are located on property that is not within the town at or about the time of final plat approval, and (ii) are intended to be dedicated to the public (i.e. to the N.C. Department of Transportation initially and eventually to the town when the subdivision is annexed), the developer shall coordinate with the electric utility company to see that all facilities necessary for the installation of street lights in accordance with the town's street lighting policy are put in place. The installation of street lights that are consistent with town policies may then be provided for either by an arrangement between the developer or a property owners association and the electric utility company until such time as the subdivision is annexed.

(c) With respect to street lighting for subdivision streets that are not intended to be dedicated to the town, the developer shall provide for the installation and maintenance (either by the developer or a successor property owners association) of a street lighting system that will provide sufficient lighting for safety and security purposes to an extent substantially equivalent to that provided for town streets under the town's street lighting policy.

Section 15-242.5 General Standards

(a) Unless otherwise specified, under no circumstances may the light level at a lot line exceed .2 foot candles. A limitation of 2.0 footcandles shall generally apply to lot lines in the B-1(c) and B-1(g) zoning districts. However, a limitation of .2 footcandles shall apply to lot lines of properties zoned B-1(c) or B-1(g) under any of the following circumstances:

(1) Where such lot lines separate properties zoned B-1(c) or B-1(g) from properties zoned residential;

(2) If and to the extent that properties zoned residential lie directly across a street from the lot lines of properties zoned B-1(c) or B-1(g);

(3) Where such lot lines separate properties zoned B-1(c) or B-1(g) from properties that are not zoned residential but that are used for residential purposes and were so used on the effective date of this subsection;

(4) If and to the extent that properties that are not zoned residential but are used for residential purposes and were so used on the effective date of this subsection lie directly across a street from the lot lines of properties zoned B-1(c) or B-1(g).

(b) Vegetative buffers shall not be used to satisfy the standards set forth in subsection (a) of this section.

(c) Any luminaire with a lamp or lamps rated at a total of more than 1,800 lumens shall be fully shielded and shall be located to prevent glare and light trespass beyond the property boundary (including onto adjacent streets).

(d) The recommended maximum light output is 70,000 lumens per acre for lots developed for commercial or multi-family purposes and 6,500 lumens per acre for lots developed for all other purposes. This recommended maximum does not apply to those uses regulated by Sections 15-242.6, 15-242.7, and 15-242.8.

(e) Floodlights with external shielding shall be angled provided that no light is directed above a twenty-five (25) degree angle measured from the vertical line from the center of the light extended to the ground, and only if the luminaire does not cause glare or light to shine on adjacent property or public or private rights-of-way. Photocells with timers that allow a floodlight to go on at dusk and off by 11:00 p.m are encouraged.

(f) The presumptive standard for the maximum height of light fixtures is twenty-five (25) feet when located on lots where the predominant use is commercial or multi-family or a combination of the two and fifteen (15) feet in height for all other instances. The Board recognizes that due to the particularities of any given development, the inflexible application of a height maximum for lighting fixtures may result in a development with excessive energy consumption or light fixtures that are incompatible with the scale or style of a development. These situations can result in a waste of money that could more desirably be used for valuable development amenities or environmentally useful features. Therefore, the permit-issuing authority may permit deviations from the presumptive requirements and may require shorter light fixtures or allow taller light fixtures whenever it finds that such deviations are more likely to satisfy the standard set forth in subsections 15-242 (a) and (b).

(1) Without limiting the generality of the foregoing, the permit-issuing authority may allow or require deviations from the light fixture height maximum set forth in Subsection 15-242.5(e) when it finds that:

- a. An existing multi-family residential development is seeking to improve security and safety for residents by increasing the number of light fixtures and also seeks to utilize light fixtures that are similar in size and style to existing fixtures.

- b. Lighting fixtures on neighboring property are substantially lower in height than the maximum that would be allowed and taller light fixtures would result in a discernible negative impact in terms of excessive illumination and glare.
- c. New lighting complies in all other respects with the requirements of Article XV, Part II.

(2) Whenever the permit-issuing authority allows or requires a deviation from the presumptive lighting fixture height requirements set forth in Subsection 15-242.5(e) it shall enter on the face of the permit the lighting fixture height requirement that it imposes and the reasons for allowing or requiring the deviation.

~~(f) shall be subject to the same setback requirements as are applicable to buildings.~~

(g) All wall packs shall be fully shielded.

(h) All luminaires shall be shielded or oriented in such a way as to direct light toward the earth's surface and away from reflective surfaces.

(i) Luminaires designed to illuminate building facades, architectural features, or landscaping shall be oriented and shielded so that direct illumination is focused exclusively on such building façade, architectural feature, or landscaping and away from adjoining properties, public or private way, and the night sky.

(j) Upward flagpole lighting is permitted for governmental flags, either publicly or privately owned, provided that the maximum lumen output is 1,300 lumens. It is encouraged that flags be taken down at sunset to avoid the need for lighting.

(k) Any luminaire must be installed in such a manner that the light emitting source is not visible from any residence not located on the same lot as the luminaire or from any public street.

(l)

Section 15-242.6 Vehicular Canopies

(a) The light level beneath vehicular canopies (e.g. for gas stations or convenience stores) shall not exceed 10 foot candles average maintained at the perimeter of the canopy and measured at ground level. Acceptable ways of achieving this objective include, but are not limited to, one or more of the following:

(1) Recessed fixtures incorporating a lens cover that is either recessed or flush with the bottom surface (ceiling) of the vehicular canopy.

(2) Surface mounted fixtures incorporating a flat glass that provides a full cut-off or fully shielded light distribution.

- (3) Indirect lighting where light is beamed upward and then reflected down from the underside of the vehicular canopy. Such fixtures shall be shielded such that direct illumination is focused exclusively on the underside of the vehicular canopy.
- (4) Any other method approved by the permit issuing authority that achieves an effect similar to the foregoing illustrations.

(b) During hours when the business is not open, the lighting level shall be reduced to security lighting only.

Section 15-242.7 Outdoor Display Areas

(a) All display area lighting shall utilize fully shielded luminaires that are installed in a fashion that maintains the fully shielded characteristics.

(b) Display area lighting shall be installed such that glare is not visible from residential properties.

(c) The display area shall not be illuminated in a manner that exceeds the minimal illuminance levels for the activity as recommended by the Illuminating Engineering Society of North America (IESNA Rp-33, or as updated).

(d) For purposes of this section, an “outdoor display area” is an outdoor area where nighttime sales activity regularly occurs and where accurate color perception of merchandise by customers is required. Examples include sales areas for automobiles, boats, building supplies, or plants.

(e) During hours when the business is not open, the lighting level shall be reduced to security lighting only.

Section 15-242.8 Outdoor Sports Fields and Performance Areas

(a) The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed 80 feet from finished grade unless approved by the permit issuing authority after receipt of substantial information justifying the need for additional height.

(b) All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with a glare control package (louvers, shields, or similar devices). The fixtures must be aimed so that their beams are directed and fall within the primary playing or performance area.

(c) Outdoor sports field and performance area lighting systems shall not be operated between the hours of eleven p.m. and sunrise.

Section 15-242.9 Prohibited Uses of Light

The following are prohibited:

- (1) The use of laser source light or any similar high intensity light for outdoor advertising or entertainment, when projected above the horizon;
- (2) The operation of searchlights for advertising purposes;
- (3) Use of mercury vapor luminaires.

Section 15-242.10 Light Measurement Techniques

- a) Light measurements shall be made at finished grade (ground level), with the light-registered portion of the meter held parallel to the ground pointing up. The meter shall have cosine and color correction and have an accuracy tolerance of no greater than plus or minus five (5) percent. Measurements shall be taken with a light meter that has been calibrated within the year. Light levels are specified, calculated and measured in footcandles (FC). All FC values are maintained footcandles unless otherwise specified.
- b) Compliance with an approved light plan associated with a permit can be verified in the field by confirming that the light fixtures and bulbs do not exceed those shown on the engineered plans. When there is no approved light plan then compliance can be verified by enforcing that the light source is blocked and/or directed in compliance with this Part or by the owner obtaining and providing a professional engineer's certification that verifies that the existing conditions comply with the ordinance.

Section 15-243 RESERVED

Section 4. A new Article XV, Part III is established at the beginning of Section 15-244 as follows:

PART III: MISCELLANEOUS UTILITIES

Section 5. Appendix A, Section A-6(b)(15) is rewritten to read as follows:

- (15) Outdoor illumination, including the following information:
 - a. Plans showing the location, type, and height of luminaires including both building and ground fixtures. The plan shall include a point-by-point footcandle array in a printout format indicating the location and aiming of illuminating devices, and indicate compliance with the maximum maintained footcandles required by Section 15-242.4 of this chapter.

- b. A description of the luminaires, including lamps, supports, reflectors, raised foundations, poles or other supports and shielding devices, which may be provided as electric utility catalogue illustrations, sheets and/or drawings, and product specifications from the manufacturer.
- c. Photometric data, such as that furnished by the manufacturer, showing the angle of light emission; and
- d. A demonstration or showing that the applicant has attempted to reduce energy consumption through the selection of energy efficient luminaires, timers, or other methods (such as fixtures that automatically change wattage output).

Section 6. All provisions in conflict with these changes are hereby repealed.

Section 7. This ordinance is effective upon adoption.



TOWN OF CARRBORO

NORTH CAROLINA

TRANSMITTAL

PLANNING DEPARTMENT

DELIVERED VIA: HAND MAIL FAX EMAIL

To: Steve Stewart, Town Manager
Mayor and Board of Aldermen

From: Patricia J. McGuire, Planning Administrator

Date: January 21, 2010

Subject: Lighting Ordinance

EXISTING AND PROPOSED ORDINANCE PROVISIONS

Article XV, Sections 15-242 and 15-243 (*Attachment C*) specify lighting requirements and excessive illumination levels in the following manner:

- 1) Streets, sidewalks, common areas in subdivisions must be sufficiently lighted to ensure the safety of persons and the security of property, and
- 2) Installation of all needed street lighting fixtures must be coordinated by a developer. The town is responsible for installation by the time streets are accepted and the developer is responsible for light installation in common areas not dedicated for public use.
- 3) Roads, driveways, sidewalks, parking lots, and other common areas and facilities in unsubdivided developments shall be sufficiently lighted as in item 1 above.
- 4) All entrances and exits in substantial buildings used for non-residential purposes and in multi-family residential buildings containing four or more dwelling units must be lighted as above.
- 5) Outdoor lighting (excluding lighting for signs) shall be controlled in terms of both height and intensity.
- 6) Lighting from a development may not produce a strong light or reflection beyond its lot lines or into the street and impair the vision of a dapper fellow.
- 7) Light poles are limited to 15 feet in height and luminaries must be shielded.
- 8) Light levels must not exceed .2 footcandles at lot lines except in certain lots in the B-1(c) and B-1(g) districts where the levels may reach 2.0 footcandles.

Footcandle is the typical unit of measurement for light, with one footcandle representing the amount of light emitted from one candle at a distance of one foot away. The maximum .2-footcandles at the property line represents light equivalent to two-tenths of one candle at

a distance of one foot from a candle. As a point of reference, the NC Fire Code, 2006 edition, requires exit lighting to provide a minimum of 1 foot-candle at the floor level. There are exceptions for auditoriums, theaters and concert halls where performances are conducted, allowing a decrease in the amount of lighting to .2 foot-candle provided that required illumination comes on immediately when an emergency occurs.

DEVELOPMENT OF THE DRAFT ORDINANCE

In 2004, the NTAAC provided the Board with a draft ordinance on lighting that included seven major changes from the existing regulations, including:

1. Defines terms and requirements more specifically than existing
2. Application of the ordinance to all non-residential, private and public outdoor lighting fixtures
3. Exempts certain uses and types of lighting
4. Describes information needed in lighting plans for new development
5. Specifies general and particular standards for uses and areas
6. Requires removal on nonconforming lighting and conformity within 5 and ½ years of adoption of the ordinance
7. Describes light measuring techniques.

The Board of Aldermen directed follow-up on the recommendations, as follows:

- 1) Staff is to create a draft ordinance amendment using the lighting report as a reference.
- 2) Reference to amortizing existing lighting fixtures should be removed; *done, although draft ordinance does require removal/modification of nonconforming floodlights three months after a notice of violation has been issued.*
- 3) Any proposed ordinance should apply to residential as well as non-residential areas. *Though some provisions apply differently to each area, the draft ordinance is applicable to all areas in Town.*
- 4) That provisions relating to street lighting not be included in the Land Use Ordinance but be included in modifications to the existing Public Works "Street Lighting Policy" *Done.*
- 5) That the draft ordinance be referred to the Downtown Development Commission, Environmental Advisory Board, Planning Board and Recreation and Parks Commission. *Done. In addition, staff has shared the draft ordinance with builders, designers, dark sky enthusiasts, and lighting and energy professionals and considered any comments in preparation for the public hearing.*

Staff has compared the NTAAC's recommended ordinance to the one prepared for this public hearing. The comparison follows the summary of the draft ordinance (below). Lighting regulations in other communities have been reviewed as part of the drafting of this ordinance, as has the IDSA model ordinance and other materials. A comparison of the draft ordinance to the most recent IDSA model ordinance is also provided below.

DRAFT ORDINANCE

The draft ordinance includes two sections, one of which repeals existing ordinance language and establishes the provisions for a new article, entitled Outdoor Lighting Standards. The second section amends the information required with an application in relation to outdoor lighting. A summary of the ordinance is provided here. Italic text indicates where substantive edits have been included in the draft.

- 1) Rewrites Sections 15-242 and reserves 15-243 for future use.
- 2) Establishes three Parts to Article XV, entitled Water and Wastewater, Outdoor Lighting, and Miscellaneous Utilities
- 3) Section 15-242 -states the purpose and intent of lighting provisions.
- 4) Section 15-242.1 - defines 14 terms related to the lighting
- 5) Section 15-242.2 -establishes applicability of the ordinance to new development and to additions or renovations of existing development. Nonconforming floodlights are to be brought into compliance or removed within three months after the date of notification of the violation. States uses/activities to which the standards do not apply.
- 6) Section 15-242.3 – states minimum security lighting standards for subdivisions with public streets, subdivisions and unified developments with private streets, and non-residential buildings and multi-family dwellings.
- 7) Section 15-242.4 - delineates the role of the Town and developers in the installation of street lights associated with new public or private streets.
- 8) Section 15-242.5 -establishes general standards for lighting fixtures, levels, trespass, and pole placement. *Modification makes the maximum lumen levels recommendations rather than requirements. Staff feels more time is needed to evaluate this provision. As a recommendation, staff will be able to monitor how these proposed levels relate to lighting plans that are submitted. The second modification in this section creates a presumptive lighting fixture height standard, allowing the permit-issuing authority some flexibility in requiring lower or allowing higher lighting fixture heights.*
- 9) Section 15-242.6 -specifies light limits, fixture types, and lighting schedules associated with vehicular canopies typically found at gas stations or convenience stores. *Modification deletes one lighting fixture option that would have allowed some spillage of light from beneath the vehicular canopies.*
- 10) Section 15-242.7 – establishes lighting parameters for outdoor display areas; refers to IESNA publication on recommended illuminance levels.
- 11) Section 15-242.8 – specifies sports and performance area lighting.
- 12) Section 15-242.9 – prohibits the use of laser source lights, searchlights for advertising purpose, and mercury vapor luminaries.
- 13) Section 15-242.10 – describes light measurement techniques. *Modification clarifies the methods that would be used for determining compliance with approved lighting plans.*
- 14) Appendix A-rewrites the description of the information that is needed to document how a land use permit application complies with the lighting requirement.

COMPARISON OF DRAFT ORDINANCE TO NTAAC RECOMMENDATIONS

	NTAAC recommendation	Draft ordinance
1	Add new provisions as Article XVII entitled "Outdoor Lighting Standards."	New provisions included within new Part II of Utilities article, "Outdoor Lighting"
2	Specify purpose and intent	See revised Section 15-242.
3	Add definitions	See new Section 15-242.1.
4	Specify applicability	See new Section 15-242.2.
5	Specify exemptions	See new Section 15-242.2; requirements will apply to all new development and any addition or replacement of existing light fixtures. Existing lighting that does not meet requirements are not considered nonconforming and may remain except for floodlights which are installed in such a manner that their light is directed other than 45 degrees above straight down. Such lights must be brought into compliance or removed within three months of a notice of violation. See attached lighting examples.
6	Specify submittal requirements	See revisions to Appendix A.
7	Specify general standards for all areas	See new Sections 15-242.3, 15-242.4, 15-242.5. (Note: draft ordinance maintains .2 fc at the property line in all locations other than certain portions of the B-1(c) and B-1(g), rather than the .5 fc recommended by NTAAC).
8	Specify lighting in parking lots and outdoor areas	See new Section 15-242.5.
9	Specify lighting for vehicular canopies	See new Section 15-242.6.
10	Specify lighting for outdoor sports field/outdoor performance	See new Section 15-242.8.
11	Specify lighting of outdoor display areas	See new Section 15-242.7.
12	Specify lighting of buildings and landscaping	See new Section 15-242.5.
13	Specify prohibitions	See new Section 15-242.9.
14	Specify nonconformities.	See new Section 15-242.2
15	Specify light measurement techniques	See new Section 15-242.10
16	Specify severability	N/A

CONSIDERATION OF INTERNATIONAL DARK SKY ASSOCIATION MODEL LIGHTING ORDINANCE
(MLO) – 60 % PUBLIC REVIEW NOT FOR ADOPTION OR USE

<u>IDSA SECTION OF MLO</u>	<u>HIGHLIGHTS</u>	<u>COMMENTS IN RELATION TO CARRBORO DRAFT</u>
<i>Preamble</i>	States that the purpose of the ordinance is to conserve energy, minimize adverse, offsite lighting impacts, curtail light pollution and preserve the nighttime environment, preserve the dark night sky for astronomical observations and enjoyment, and help protect the natural environment from the adverse effects of night lighting from electric sources.	Carrboro draft describes the purpose and intent of the outdoor lighting provisions to ensure safety and security, advertising and attention to commercial areas. Excessive or inappropriately directed light is described as possibly creating glare, interfering with the observation of the nighttime sky, wasting valuable energy or otherwise interfering with the enjoyment of public or private property.
<i>Definitions</i>	61 definitions are included	14 definitions are included, six of which align with definitions in the MLO
<i>General requirements for all outdoor lighting</i>	Specifies applicability, exemptions; defines 5 lighting zones from “no ambient lighting” to “high ambient lighting” based on expected uses and visual needs of users in various areas in a jurisdiction; establishing automatic control and curfew provisions	See Section 15-242.2, 15, 242.3, 15-242.4 and 15-242.5. Staff considered the lighting zone approach, but found it to be more complicated than was needed. Curfew provisions are specified or recommended for floodlights in Section 15-242.5(e), canopy lighting in 15-2426(b), outdoor display areas in 15-242.7(e), and outdoor sports areas in 15-242.(c).
<i>Requirements for non-residential outdoor lighting</i>	Specifies Prescriptive (total site lumens limits and limits to off-site impacts (BUG)) or Performance methods for determining compliance.	See 15-242.5 (d) and (f); see also 15-242.6 (vehicular canopies), 15-242.7 (outdoor display areas), and 15-242.8 (outdoor sports and performance areas). Maximum lumen levels included in Section 15-242.5(d) derived from MLO and other sources. Due to complexity, staff suggests adopting as a recommended standard to allow time for evaluation.
<i>Requirements for residential outdoor lighting</i>	Total wattage and lumens specified.	See 15-242.5 generally, with specific note of allowances for residential uses in (d) and (f). Maximum wattage/lumens suggested as recommended standard at this time.

<u>IDS</u> <u>A</u> <u>SECTION OF</u> <u>MLO</u>	<u>HIGHLIGHTS</u>	<u>COMMENTS IN RELATION TO</u> <u>CARRBORO DRAFT</u>
<i>Lighting by special use permit only</i>	Alternative permit process proposed for high-intensity and special purpose lighting, complex and nonconforming uses.	Permit requirements by land use proposed. No changes to this structure are included/recommended in the draft ordinance.
<i>Existing lighting</i>	Pre-existing lighting to comply with ordinance as follows: Amortization date to be specified; New use/change in use: all fixtures brought into compliance before new use initiated. Additions: all lighting to comply if addition of 50 percent or more of dwelling units, square footage, lighting fixtures; if less than 50 percent addition, only new are required to comply. After abandonment of use for six months or more, all outdoor lighting must comply.	Addition of new luminaires or replacement of existing must comply with new requirements. Any floodlights, per Section 15-242.5(d) must be brought into compliance or removed within three months after the date of notification of violation. Section 15-242.5 (e) proposes a mechanism that would allow some deviation in the height of light fixtures based on existing uses.
<i>Enforcement and penalties</i>	This section is reserved.	Refer to Article VII http://www.townofcarrboro.org/PZ/I/PDFs/LUO/ART-VII.pdf
<i>Tables</i>	Lumen levels and BUG ratings.	Recommended lumen levels derived from MLO, Table D
<i>Appendix A "Performance Method"</i>	Describes computer software analysis of skyglow/total illumination.	N/A

STAFF RECOMMENDATION

The ordinance included in the public hearing agenda packet includes several edits, including additions and deletions from the version provided at the RTS in November. These changes are summarized above in the section describing the draft ordinance. Staff recommends adopting the ordinance with these changes.

Excerpt from Carrboro Land Use Ordinance, November 2009

Section 15-242 Lighting Requirements.

(a) Subject to subsection (b), all streets, sidewalks, and other common areas or facilities in subdivisions created after the effective date of this chapter shall be sufficiently illuminated to ensure the security of property and the safety of persons using such streets, sidewalks, and other common areas or facilities.

(b) To comply with subsection (a), the developer shall coordinate with the electric utility company to see that all facilities necessary for eventual installation of street lights are put in place. However, the town shall be responsible for requesting the electric utility company actually to install such street lights at the time the town accepts the streets for maintenance. The developer shall be entirely responsible for the placement of necessary lighting in common areas not dedicated to public use.

(c) All roads, driveways, sidewalks, parking lots, and other common areas and facilities in unsubdivided developments shall be sufficiently illuminated to ensure the security of property and the safety of persons using such roads, driveways, sidewalks, parking lots, and other common areas and facilities.

(d) All entrances and exits in substantial buildings used for non-residential purposes and in multi-family residential dwellings containing more than four dwelling units shall be adequately lighted to ensure the safety of persons and the security of the building.

Section 15-243 Excessive Illumination (AMENDED 05/25/99; 2/5/08)

(a) Outdoor lighting (not including sign lighting) shall be controlled in both height and intensity as provided in this section.

(b) No development shall be permitted to produce a strong light or reflection of that light beyond its lot lines onto neighboring properties, or onto any street so as to impair the vision of the driver of any vehicle upon such street.

(c) Light fixtures may not exceed fifteen (15) feet in height, and luminaries shall be shielded or configured to cast the light downward and to prevent light from shining beyond the lot lines into neighboring properties or public ways. The permit issuing authority may by condition impose additional requirements as necessary to prevent adverse impacts to adjoining properties and residents. Notwithstanding the foregoing, this section shall not apply to the lighting of recreational facilities provided that, to the maximum extent practicable, potential light pollution can be otherwise minimized through the use of shielding and limits on hours of use.

(d) Except as otherwise provided in this subsection, under no circumstances may the light level at a lot line exceed .2 foot candles. A limitation of 2.0 footcandles shall generally apply to lot lines in the B-1(c) and B-1(g) zoning districts. However, a limitation of .2

footcandles shall apply to lot lines of properties zoned B-1(c) or B-1(g) under any of the following circumstances:

- (1) Where such lot lines separate properties zoned B-1(c) or B-1(g) from properties zoned residential;
- (2) If and to the extent that properties zoned residential lie directly across a street from the lot lines of properties zoned B-1(c) or B-1(g);
- (3) Where such lot lines separate properties zoned B-1(c) or B-1(g) from properties that are not zoned residential but that are used for residential purposes and were so used on the effective date of this subsection;

If and to the extent that properties that are not zoned residential but are used for residential purposes and were so used on the effective date of this subsection lie directly across a street from the lot lines of properties zoned B-1(c) or B-1(g).

TOWN OF CARRBORO



To the Board of Aldermen, the Planning Board, and the Appearance Commission, as appropriate, of the Town of Carrboro:

I (we), the undersigned do hereby respectfully make application and petition the Board of Aldermen to amend the Land Use Ordinance. In support of this application, the following facts are shown:

- 1) The Land Use Ordinance, at present, would allow (description/quote, page and number of section in question):

Attached.

- 2) The proposed amendment to the Land Use Ordinance would allow (describe briefly intended change):

- 3) State the reasons for the proposed amendment:

SIGNATURE: *Shannon F. Brummett* applicant Shannon F. Brummett (print)

ADDRESS: 3608 University Dr. #201, Durham, NC 27707

TELEPHONE NUMBER: (919) 401 4577

- 1) The Land Use Ordinance, at present, would allow (description/quote, page and Number of section in question):

Article XV; Pg 7 (Section 15-243 Excessive Illumination) Section (C) in part:
Light Fixtures may not exceed 15 Feet in height.”

- 2) The proposed amendment to the Land Use Ordinance would allow (describe briefly intended change):

When an existing nonconformity to the section is present by a majority of the fixtures, the landowner at their option may increase the lighting height not greater than the current residential maximum limits. The lighting must comply with the full cutoff fixture, and engineered to limit the horizontal and aerial exposure to current standards.

- 3) State the reasons for the proposed amendment:

The current lighting offered in the full cutoff fixture is less efficient at a height of 15 feet than the similar fixture at a height of 25 feet. This limited illumination will require 3 times the fixtures and increased costs for installation and operation.

ORANGE COUNTY PLANNING & INSPECTIONS DEPARTMENT

Craig N. Benedict, AICP, Director

**Administration
(919) 245-2575
(919) 644-3002 (FAX)
www.co.orange.nc.us**



**306F Revere Road
P O Box 8181
Hillsborough,
North Carolina, 27278**



TRANSMITTAL DELIVERED VIA EMAIL

January 8, 2010

Patricia J. McGuire, AICP
Planning Administrator
Town of Carrboro
301 W. Main St.
Carrboro, NC 27510

SUBJECT: Joint Planning Review of Proposed Ordinance Amendments

Dear Trish:

Thank you for the opportunity to review the following Land Use Ordinance amendments received by us on December 31, 2009 and proposed for town public hearing on January 26, 2010:

- Modifying Street Separation Requirement
- Revisions to Lighting Provisions
- Modifications to Buffer and other Provisions for Compliance with Jordan Lake Rules

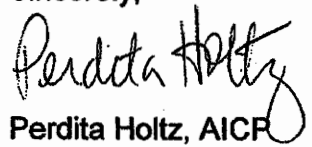
We find no inconsistency with the adopted *Joint Planning Area Land Use Plan* on these proposed amendments. We'd like to offer the following general comments:

- In the proposed Lighting section of the Ordinance – Section 15-242.3(c): the term "substantial buildings" is used but we have been unable to find a definition of the term in the Town's LUO. We suggest that a definition be added for "substantial building" in order to be clear as to what types of buildings this provision applies.
- In the proposed Lighting section of the Ordinance – Section 15-242.4(a) and (b): We believe the words "to see" are used in these sections to mean "to ensure." If so, we suggest that "to ensure" or a similar synonym be used as we find the term "to see" as used in this context to be vague.

- In the proposed Lighting section of the Ordinance – Section 15-242.4(a): in the last sentence, there appears to be a typo; the word “or” should be “for.”

If you have any questions or need additional information, please let me know.

Sincerely,



Perdita Holtz, AICP
Planning Systems Coordinator



ENVIRONMENTAL ADVISORY BOARD

301 West Main Street, Carrboro, North Carolina 27510

RECOMMENDATION

THURSDAY, JANUARY 21, 2010

Land Use Ordinance Text Amendments to outdoor lighting provisions

Motion was made by Nina Butler and seconded by Andreas Hay that the EAB recommends that the Board of Aldermen adopt the draft ordinance with the following revision, to address light pollution and energy reduction goals:

Section 15-242.3 Minimum Lighting Requirements for Security

(a) All ~~streets, sidewalks, and~~ other common areas or facilities in subdivisions shall be sufficiently illuminated to ensure the security of property and the safety of persons using such streets, sidewalks, and other common areas or facilities.

(b) All ~~roads, driveways, sidewalks,~~ parking lots, and other common areas or facilities in unsubdivided developments shall be sufficiently illuminated to ensure the security of property and the safety of persons using such roads, driveways, sidewalks, and other common areas or facilities.

VOTE: AYES: Butler, Hay, Weller, Gisler

ABSENT/EXCUSED: Arnsberger, Mullen, Stidham

NOES:

ABSTENTIONS:

Associated Findings

By a unanimous show of hands, the Environmental Advisory Board membership also indicated that no members have any financial interests that would pose a conflict of interest to the adoption of this amendment.

Furthermore, the EAB of the Town of Carrboro finds that the proposed text amendment, as modified, is consistent with Carrboro Vision 2020 policies specified in 2.2 5.51, policies that seek to preserve the natural environment and minimize energy use.

Andreas Hay
(Chair)

1-21-10
(Date)

F-4



TOWN OF CARRBORO

PLANNING BOARD

301 West Main Street, Carrboro, North Carolina 27510

R E C O M M E N D A T I O N

THURSDAY, JANUARY 21, 2010

Land Use Ordinance Text Amendments to outdoor lighting provisions

Motion was made by Damon Seils and seconded by Rose Warner that the Planning Board recommends that the Board of Aldermen adopt the draft ordinance.

VOTE: **AYES:** (6) Matthew Barton, Sharon Cook, Debra Fritz, Damon Seils, David Shoup, and Rose Warner; **ABSENT/EXCUSED:** (4) Richard Bell, David Clinton, Heidi Paulsen, and Susan Poulton
NOES: (0); **ABSTENTIONS:** (1) CARNAHAN

Associated Findings

By a unanimous show of hands, the Planning Board membership also indicated that no members have any financial interests that would pose a conflict of interest to the adoption of this amendment.

Furthermore, the Planning Board of the Town of Carrboro finds that the proposed text amendment The Board concludes that the above described amendment is consistent with Carrboro Vision 2020 policies specified in 2.2 and 5.51 that seek to preserve the natural environment and minimize energy use.

VOTE: **AYES:** (6) Matthew Barton, Sharon Cook, Debra Fritz, Damon Seils, David Shoup, and Rose Warner; **ABSENT/EXCUSED:** (4) Richard Bell, David Clinton, Heidi Paulsen, and Susan Poulton
NOES: (0); **ABSTENTIONS:** (1) James Carnahan

Matthew Barton 1/22/10
(Chair) (Date)