

Chatham County

Lighting Ordinance

Adopted September 21, 2009

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Chatham County Lighting Ordinance

SECTION 1 AUTHORITY

By the authority of Chapter 153A, Article 6, of the General Statutes of North Carolina, the Chatham County Board of Commissioners does hereby exercise the powers and authority to adopt this ordinance to promote the public health, safety, and general welfare of its citizenry.

SECTION 2 TITLE

This Ordinance shall be known as “The Chatham County Lighting Ordinance”.

SECTION 3 JURISDICTION

The regulations set forth in this Ordinance shall apply to all areas of land within the jurisdiction of Chatham County, exclusive of municipalities and the extraterritorial jurisdictions thereof; and as otherwise regulated within the zoned portions of the County shown on the official zoning maps as established in Section 6 of the Chatham County Zoning Ordinance.

SECTION 4 INTENT AND PURPOSE

The purpose of this Ordinance is to provide outdoor lighting regulations that will:

1. Permit reasonable uses of outdoor lighting for night-time safety, utility, security, productivity, enjoyment, and commerce.
2. Conserve energy and resources to the greatest extent possible.
3. Minimize adverse offsite impacts including light trespass and obtrusive light.
4. Curtail light pollution and preserve the nighttime environment.
5. Help preserve the dark night sky for astronomy and enjoyment.
6. Help protect the natural environment from the adverse effects of night lighting from electric sources, and
7. Abate conditions detrimental to the safety and welfare of the citizens of Chatham County.

SECTION 5 CONFORMANCE WITH ALL APPLICABLE CODES

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and applicable sections of the Building Code.

SECTION 6 APPLICABILITY

Except as listed as an exemption or with special exception under Section 11.4 from this ordinance, all outdoor lighting installed after the effective date of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, buildings, poles, the earth, or any other location, including lighting installed by any third party.

SECTION 7 DEFINITIONS

Astronomic Time Switch – An automatic lighting control device that operates as an on/off switch for outdoor lighting relative to time of solar day with time of year correction.

Backlight – For an exterior luminary, light emitted in the quarter sphere below horizontal and in the opposite direction of the intended orientation of the luminary. For luminaries with symmetric distribution, backlight will be the same as frontlight.

Candela — A measure of luminous or light intensity in a certain direction. Useful in determining how much light is shining out of a fixture and in what direction.

Diffusing Panel (lens) – A translucent material covering the lamps in a luminaire in order to reduce the brightness by distributing the light flux over an extended area.

Direct Lighting – Lighting involving luminaries that distribute 90 to 100% of the emitted light in the general direction of the surface to the illuminated. The term usually refers to light emitted in a downward direction.

Emergency Conditions – Loss of electrical power, fire, security alarm, or other situation requiring uninterrupted illumination for the path of egress.

Fixture – An assembly that holds the lamp (bulb) in a lighting system. It includes the elements designed to give light output control, such as a reflector (mirror) or refractor (lens), the ballast, housing, and the attachment parts.

Flood Lamp — A form of lighting designed to direct its output in a specific direction with a reflector formed from the glass envelope of the lamp itself. Such lamps are so designated by the manufacturers and are typically used in residential outdoor area lighting.

Flood Light — A form of lighting designed to direct its output in a diffuse, more or less specific direction, with reflecting or refracting elements located external to the lamp.

Footcandle (FC) — A quantitative unit measuring the amount of light (illumination) falling onto a given point. One footcandle equals one lumen per square foot.

Frontlight/Forward light – For an exterior Luminaire, light emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the Luminaire.

Glare — The effect produced by a light source within the visual field that is sufficiently brighter than the level to which the eyes are adapted, to cause annoyance, discomfort, or loss of visual performance and ability.

HID — High intensity discharge lighting is a bulb type including mercury vapor, metal halide, high pressure or low-pressure sodium, which glow when an electric current is passed through a gas mixture inside the bulb.

Holiday/Festive Lighting – Lighting that is installed with the intent to operate during a designated temporary period of time where a specific theme or event is a focus of attention.

IDA – International Dark-Sky Association, Tucson, ZA USA

IES – Illuminating Engineering Society, New York, NY USA

IESNA —The Illuminating Engineering Society of North America, a non-profit professional organization of lighting specialists that has established recommended design standards for various lighting applications.

Illuminance — The amount of light falling on a surface-measured in lux or footcandles.

Illuminated Area – An exterior area for which lighting of reasonable uniformity and illumination is provided; not incidentally lighting or partially lighted.

Improved Area – The area of a specific use, measured in plain view.

Initial Lamp Lumens – Lumen rating of a lamp when the lamp is new and has not depreciated in light output (rated lamp lumens). Lamp lumen depreciation equals 1.0.

Internal Refractive Lens — A glass or plastic lens installed between the lamp and the sections of the outer fixture globe or enclosure. Refractive refers to the redirection (bending) of the light as it goes through the lens, softening and spreading the light being distributed from the light source thereby reducing direct glare.

Lamp – A generic term for a source crated to produce optical radiation (i.e. “light”), often called a bulb or tube.

Lamp Watts – The rated watts of the lamp, not including the watts of external auxiliaries.

Light Pollution – Light scattered by the atmosphere that interferes with the appreciation of observation of night skies.

Lighting – Light produced by man-made sources, including electric lamps, gas lamps, and similar sources.

Lighting Administrator – The Chatham County Manager or his/her designee.

Lighting Equipment – Equipment specifically intended to provide electric illumination, including but not limited to, luminaries, poles, posts, and related structures, electrical wiring, and other necessary or auxiliary components.

Light Source — The element of a lighting fixture that is the point of origin of the lumens emitted by the fixture.

Light Trespass — Light emitted by a lighting installation that falls outside the boundaries of the property on which the installation is sited. This has adverse effects on residents, vehicle operators and pedestrians, the natural environment.

Lumen — A quantitative unit used to identify the amount of light emitted by a light source. A lamp is generally rated in lumens. International unit of luminous flux; light power corrected for V, the human photopic sensitivity function.

Luminaire – The complete lighting unit assembly (fixture), consisting of a lamp, or lamps and ballast/s (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply.

Maintained Footcandles — Illuminance of lighting fixtures adjusted for a maintenance factor accounting for dirt build-up and lamp output depreciation. The maintenance factor used in the design process to account for this depreciation cannot be lower than 0.72 for high-pressure sodium and 0.64 for metal halide and mercury vapor.

Medium Base — The size of lamp socket designed to accept a medium or Edison base lamp.

Mounting Height – The height of a Luminaire above grade level.

Natural Recreation Area – An area that is intrinsically dark at night where electric lighting should be held to a minimum as designated by Chatham County.

New Lighting – Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.

Opaque – A solid material allowing no light to pass through.

Ornamental Lighting – Lighting that is not a sign and does not impact the function and safety of an area but is purely decorative, or used to illuminate architecture and/or landscaping, and installed for aesthetic effect.

Outdoor Performance Area — An area permanently dedicated to the public presentation of music, dance, theater, media arts, storytelling, oratory, or other performing arts, whether publicly or privately owned, including but not limited to amphitheaters and similar open or semi-enclosed structures.

Outdoor Sports Field — An area designed for recreation (public or privately owned). These areas include, but are not limited to, baseball/softball diamonds, soccer fields, football fields, and golf courses, golf driving ranges, tennis courts, racetracks, firearm shooting ranges, and swimming pools.

Photoelectric Switch – A control device employing a photocell or photodiode to detect daylight and automatically switch lights off by day.

Property Line – The edges of the legally defined extent of privately or publically owned property.

Replacement Lighting – Lighting installed specifically to replace existing lighting equipment that is sufficiently inoperable to be beyond repair/s.

Repair/s – The reconstruction or renewal of any part of an existing Luminaire for the purpose of its on-going operation, including but not limited to re-lamping or replacement of components such as: capacitor, ballast, or photoelectric control.

Right-of-Way — An interest in land to the county which provides for the perpetual right and privilege of the county, its agents, franchise holders, successors, and assigns to construct, install, improve, reconstruct, remove, replace, inspect, repair, maintain, and use a public *street*, including related and customary uses of street rights-of-way such as sidewalks, bike paths, landscaping, mass transit facilities, traffic control, traffic control devices and signage, sanitary sewer, storm water drainage, water supply, cable television, electric power, gas, and telephone transmission and related purposes in, upon, over, below, and across the rights-of-way.

Seasonal Lighting – Temporary lighting installed and operated in connection with holidays, community celebrations or traditions.

Skyglow – The illumination of clouds, moisture, and airborne matter by lighting.

Temporary Lighting — Lighting used for a limited duration, but in no case longer than thirty (30) days.

Time Switch – An automatic lighting control device that operates as an on/off switch for outdoor lighting according to the time of day.

Uplight – For an exterior Luminaire, light emitted in the hemisphere at or above the horizontal plane.

Vehicular Canopy — A roofed, open, drive-through structure designed to provide temporary shelter for vehicles and their occupants while making use of a business’ services.

Wall Pack — A type of light fixture typically flush-mounted on a vertical wall surface.

Wide-body Refractive Globe — A translucent lamp enclosure used with some outdoor fixtures to provide a decorative look (including but not limited to acorn- and carriage light-style fixtures). “Wide-body” refers to a wider than average size globe (greater than 15.75” in diameter). “Refractive” refers to the redirection (bending) of the light as it goes through the lens, rendering the light fixture more effective. Wide-body refractive globes are intended to soften and spread the light being distributed from the light source thereby reducing direct glare.

SECTION 8 ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) CUTOFF CLASSIFICATIONS¹

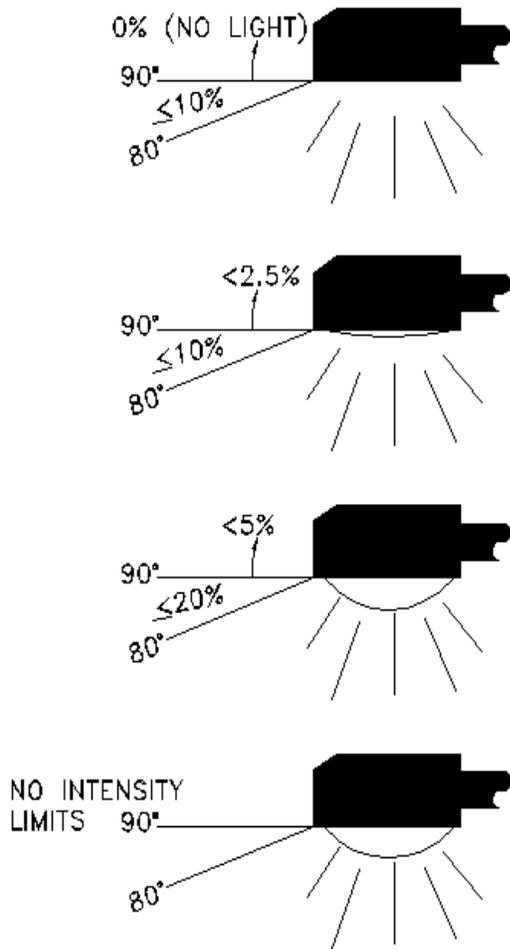
Full Cutoff—A fixture light distribution where no light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

Cutoff—A fixture light distribution where no more than 2.5% of a lamp’s light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

Semi-Cutoff—A fixture light distribution where no more than 5% of a lamp’s light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 20% of the lamp’s light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture

Noncutoff—A fixture light distribution where there is no light intensity limitation in the zone above the maximum distribution of light intensity.

¹ with minimal wording modifications to provide non-technical clarity



1. Full Cutoff—A fixture light distribution where no light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

2. Cutoff—A fixture light distribution where no more than 2.5% of a lamp's light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture.

3. Semi-Cutoff—A fixture light distribution where no more than 5% of a lamp's light intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 20% of the lamp's light intensity is emitted at or above an angle 10 degrees below that horizontal plane, at all lateral angles around the fixture

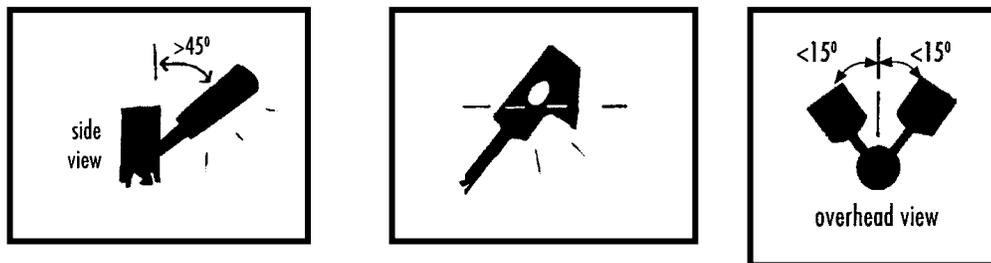
4. Noncutoff—A fixture light distribution where there is no light intensity limitation in the zone above the maximum distribution of light intensity.

SECTION 9 LIGHT MEASUREMENT TECHNIQUE

Light level measurements shall be made at the property line of the property upon which the light to be measured is being generated. If measurement on private property is not possible or practical, light level measurements may be made at the boundary of the right-of-way that adjoins the property of the complainant or at any other location on the property of the complainant. Measurements shall be made at finished grade (ground level), with the light-registering 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 previous two years. Light levels are specified, calculated and measured in footcandles (FC). All FC values are maintained footcandles unless specified otherwise. See the definition for maintained footcandles in Section 5 for maximum allowed light loss factors.

SECTION 10 GENERAL STANDARDS FOR OUTDOOR LIGHTING

1. Lighting Plan—A lighting plan shall be provided for review and must be approved prior to the issuance of the building permit. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures.
2. Unless otherwise specified in the following subsections, the maximum light level shall be 0.5 maintained footcandle at any property line in a residential area, or on a lot occupied by a dwelling, congregate care or congregate living structure, unless otherwise approved by the Chatham County Lighting Administrator.
3. All floodlights shall be installed such that the fixture shall be aimed down at least forty-five (45) degrees from vertical. These lights shall be positioned such that any such fixture located within fifty feet (50) of a public street right-of-way is mounted and aimed perpendicular to the right-of-way, with a side-to-side horizontal aiming tolerance not to exceed fifteen (15) degrees from perpendicular to the right-of-way. The Lighting Administrator may require shields to be installed on floodlights before, during or after the installation when needed to further reduce lighting trespass, glare and light pollution. Flood lights shall not be aimed at residential property.



4. All flood lamps emitting 1,000 or more lumens shall be aimed at least sixty (60) degrees down from horizontal or shielded such that the main beam from the light source is not visible from adjacent properties or the public street right-of-way.
5. All wall pack fixtures shall be full cutoff fixtures.
6. All fixtures installed, owned, or leased by governmental or public agencies, or their agents, for the purpose of illuminating public streets are otherwise exempt from this regulation. Fixtures installed through private development are not exempt.
7. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient fixtures.
8. With the exception of essential all-night security lighting, the plan shall demonstrate lighting reduction procedures, implemented using timers or other methods (such as fixtures that automatically change wattage output). Said lighting reduction shall be active between approximately 12 midnight and dawn. For 24-hr commercial activities, this requirement may be adjusted by approval of the Board of Commissioners.

SECTION 11 LIGHTING IN OUTDOOR AREAS (Residential and Non-Residential)

1. Other than flood lights and flood lamps, all outdoor area and parking lot lighting fixtures of more than 2,000 lumens shall be full cutoff fixtures, or comply with subsection 9.4 below.
2. The mounting height of all outdoor lighting, except outdoor sports field lighting and outdoor performance area lighting shall not exceed thirty-seven (37) feet above finished grade, unless approved by the Board of Adjustment as having no adverse effect.
3. Security Lighting for Open Parking Facilities: For lighted parking lots the minimum light level shall be no less than 0.2 footcandles. All light levels are measured at ground level. The minimum light level requirements vary depending on the activity classification. The specified minimum FC value above 0.2 FC as outlined in the following table means that the lowest light level point or location in the parking lot must not exceed the minimum stated FC value in the table (i.e. 0.9 FC for large shopping centers). An average to minimum uniformity ratio of 4:1 means that the average FC to minimum FC ratio cannot be worse (higher) than 4:1. See the following table:

Security Light Levels for Open Outdoor Parking Facilities*		
Use/Task	Maintained Footcandles	Uniformity Avg/Min
Parking, residential, multi-family Low to medium vehicular/pedestrian activity	Range from 0.2 Min to 0.6 Min	4:1
Parking, industrial/commercial/Institutional/municipal High activity, i.e. large shopping centers/fast food facilities, major athletic/civic cultural events	0.9 Min	4:1
	Medium/low activity, i.e. community shopping, office parks, hospitals, commuter lots, cultural/civic/recreational events, residential neighborhood shopping, industrial employee parking, schools, church parking	Range from 0.2 Min to 0.7 Min

Source: IESNA 8th Edition Lighting Handbook; Modification: Medium and Low Activity Level recommendations have been combined.

Notes:

- a. Illumination levels are horizontal on the task, e.g. pavement or area surface.
- b. Uniformity ratios dictate that average illuminance values shall not exceed minimum values by more than the product of the minimum value and the specified ratio. For example, for commercial parking medium/low activity, the average footcandles shall not be in excess of 2.8 (0.7 x 4).
- c. A low/medium activity can be reclassified upward when appropriate and only with Chatham County Lighting Administrator approval.
- d. Examples of lighting measurements taken during the development of this ordinance are available from the Planning Department.

4. Exceptions:

- a. Non-cutoff decorative post-mounted fixtures may be used but must be equipped with a solid top when available to direct the light downward or meet the cutoff classification. Mounting heights of 18 feet or less above ground are allowed when the maximum initial lumens generated by each fixture does not exceed 9500 initial lamp lumens.
 - (1) All metal halide, mercury vapor, fluorescent, induction, white high pressure sodium and color improved high pressure sodium lamps used in non-cutoff fixtures shall be coated with an internal white frosting inside the outer lamp envelope.
 - (2) All metal halide solid-top decorative post fixtures equipped with a medium base socket must use an internal refractive lens, a diffusing panel (lens) or a wide-body refractive globe as described in Section 5.
- b. Dusk-to-dawn open bottom security lights must be fully shielded to provide a full cutoff light distribution.
- c. Temporary lighting for special events of short duration. Typically these are low wattage or low voltage applications for public festivals, celebrations, and the observance of holidays, carnivals, and celebrations. Portable (non-permanent) internally-illuminated signs come under this classification and, as such, can be used for up to thirty (30) days only.
- d. Airport lighting controlled by the Federal Aviation Administration (FAA).
- e. Lighting of the United States of America and State of North Carolina flags and other flags or insignia of any governmental entity.
- f. Lighting equipment specified or identified in a specific special use or conditional use permit.
- g. Lighting equipment required by laws and/or regulation of a government, authority or entity having applicable jurisdiction.

SECTION 12 LIGHTING FOR VEHICULAR CANOPIES

Areas under a vehicular canopy shall have an average maximum horizontal illuminance of twenty-four (24) maintained footcandles (FC). Areas outside the vehicular canopy shall be regulated by the standards of Section 9 above. Lighting under vehicular canopies shall be designed so as not to create glare off-site. Acceptable methods include one or both of the following:

- (1) Recessed fixture incorporating a lens cover that is either recessed or flush with the bottom surface (ceiling) of the vehicular canopy that provides a full cutoff or fully-shielded light distribution.
- (2) Surface mounted fixture incorporating a flat glass that provides a full cutoff or fully-shielded light distribution.

SECTION 13 OUTDOOR SPORTS FIELD/OUTDOOR PERFORMANCE AREA LIGHTING

1. The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed eighty (80) feet from finished grade unless approved by the Chatham County Board of Adjustment.
2. All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with a glare control package (louvers, shields, or similar devices).
3. The fixtures must be aimed so that their beams are directed and fall within the primary playing or performance area. The maximum light level shall be 0.5 maintained footcandles at any property line in a residential district, or on a lot occupied by a dwelling congregate care or congregate living structure.
4. As outdoor sport field/outdoor performance area lighting non-conforming fixtures fail, maintenance replacement fixtures must be installed that comply with the requirements of these lighting standards.
5. The hours of operation for the lighting system for any game or event shall not exceed one hour after the end of the event.

SECTION 14 NATURAL RECREATION AREAS

These locations are intrinsically dark landscapes at night. Such areas include state and national parks, conservation areas, natural recreation areas, and areas adjacent to optical astronomical observatories. These places are used for camping, etc., where a naturally dark environment is desired and are designated by Chatham County.

1. Light reduction procedures begin at approximately 12 midnight with limited essential safety and security lighting.
2. All fixtures shall be full cut-off.

SECTION 15 LIGHTING OF OUTDOOR DISPLAY AREAS

The following provisions apply to outdoor display areas except for car dealership parking lots, as specified in item (4), below:

- (1) Parking lot outdoor areas shall be illuminated in accordance with the requirements for Section 9 above. Outdoor display areas shall have a maximum average maintained illuminance of twenty-four (24) maintained footcandles.
- (2) All light fixtures shall meet the IESNA definition of cutoff fixtures. Forward throw fixtures (type IV light distribution, as defined by the IESNA) are required within twenty-five (25) feet of any public street right-of-way. Alternatively, directional fixtures (such as floodlights) may be used provided they shall be aimed in accordance with subsections 8.3 and 8.4 of this ordinance.
- (3) The mounting height of outdoor display area fixtures shall not exceed thirty-seven (37) feet above finished grade.

- (4) For car dealership parking lots, the following provisions shall apply:
- a. Full cutoff fixtures shall be used.
 - b. Mounting Heights: Up to a maximum of thirty-five (35) plus 2-foot raised base for parking areas as needed.
 - c. Lighting at the first row, the car bumper may not exceed a maximum average maintained illuminance of 24 footcandles.
 - d. Lighting in the non-display area of the parking lot after hours shall be no higher than 7 FC average maintained.

SECTION 16 LIGHTING OF BUILDINGS

1. Lighting fixtures shall be selected, located, aimed, and shielded so that direct illumination is focused exclusively on the building façade, plantings, and other intended site features, and away from adjoining properties and the public street right-of-way.
2. Illumination on any vertical surface or angular roof shall not exceed 5.0 FC average maintained
3. To the extent practical and where possible, lighting fixtures shall be directed downward rather than upward
4. When upward aiming is used, placement of low wattage fixtures with shields (as needed) close to the building to graze the façade is required to minimize reflected light from windows and other surfaces. The Lighting Administrator can waive this requirement in rare and unusual cases if it is demonstrated that the physical location of light fixtures close to the building to accomplish this design is not possible.

SECTION 17 PERMANENT SIGN AND BILLBOARD LIGHTING

External lighting fixtures illuminating signs and billboards shall be aimed and shielded so that direct illumination is focused exclusively on the sign. Externally lighted signs shall be lighted from the top of the sign downward. The Lighting Administrator can waive this requirement in rare and unusual cases if it is demonstrated that the physical location of light fixtures for top down aiming is not possible. The maximum watts permitted to illuminate a sign are determined by multiplying the sign face area by 2 watts per square foot. Internally illuminated signs are permitted, provided that the message or letters of such sign consist of nonreflective material.

Exception: Signs less than 7 feet (2 meters) in height above grade may be illuminated by ground mounted uplighting not exceeding 100 lamp watts per sign face.

NOTE: Refer to Section 9.4(c) regarding portable internally illuminated signs.

SECTION 18 HOLIDAY/FESTIVE LIGHTING

Holiday/festive lighting is allowed provided it complies with the definition outlined in Section 5. The connection of multiple holidays and/or festive events over a number of weeks and/or months is not permitted. Lamps below 7 watts are exempt and have no restrictions on use.

SECTION 19 WALKWAYS, BIKEWAYS AND PARKS (Section to be lighted)

The walkway, pathway, or ground areas that are to be lighted shall be illuminated to a level of at least 0.2 and no more than 0.5 average horizontal maintained footcandles.

SECTION 20 LANDSCAPE LIGHTING

All landscape and residential façade lighting systems shall employ shielded directional luminaires not to exceed 40 lamp watts. The luminaires shall be aimed such that the light source cannot be seen from any reasonable viewing point on an adjacent property.

SECTION 21 PERMITTING AND APPROVAL PROCESS

The following section applies generally to the Permitting and Approval Process and outlines requirements of the applicant seeking a permit for work involving outdoor lighting for residential subdivision single family and multi-family developments, commercial, multi-use, office, institutional and industrial projects. Specific permitting requirements are to be in compliance with the procedures established by the Chatham County Planning Department and the Chatham County Central Permitting Department. These aforementioned requirements shall serve as the framework by which this ordinance is implemented.

As with any permitting process, the applicant shall be required to submit the appropriate supporting documentation at the time the application is submitted for review. The documentation submitted shall contain, but not be limited to the following, all or part of which may be part of, or in addition to, the information required elsewhere in this Ordinance, and by the policies and procedures established by the Chatham County Planning Department and the Chatham County Central Permitting Department.

- (1) The applicant for any permit required for work involving outdoor lighting for commercial, office, institutional and industrial projects with a gross floor area of more than 5,000 square feet, residential projects other than detached single family dwellings of more than 6 units, all vehicular canopies and all outdoor display areas shall submit documentation at time of site plan or plot plan approval that the proposed lighting plan complies with the provisions of this lighting standard.
- (2) A lighting plan to scale is required that shows a point-by-point footcandle array on a 10' by 10' grid in a printout format indicating the location and aiming of illuminating devices. The printout shall include a summary table to indicate compliance with the average maintained and minimum footcandles and average to minimum uniformity ratios. FC point values in the appropriate areas to determine light trespass compliance is also required. The lighting plan shall include as a minimum an arrangement of the subject outdoor lighting, a fixture schedule detailing the mounting height & technique, fixture type, bulb type & wattage, controls, lenses, etc. The lighting plan shall demonstrate a consideration for reduced energy consumption through the selection of energy efficient

fixtures as well as the implementation of the stated lighting practices as outlined throughout this ordinance.

- (3) A point-by-point photometric footcandle array created from industry recognized lighting software systems and/or manual calculations created by a professional engineer, lighting certified professional, vendor or an individual that possesses the skills to perform such calculations. Methods used for calculating the lighting footcandle levels shall be indicated in the application documentation. The footcandle array shall be provided in a hardcopy printed format indicating the location and aiming of all applicable illuminating devices covered under the subject application based on the site and/or building arrangement plan complete with consideration of adjoining properties and roadways.
- (4) Description of the illuminating devices, fixtures, lamps, supports, reflectors, poles, raised foundations and other devices (including but not limited to manufacturers or electric utility catalog specification sheets and/or drawings, and photometric report indicating fixture classification [cutoff fixture, wall pack, flood light, etc.]).

Projects that are not required to submit items identified in subsection 19.1 above are still subject to comply with the provisions of this ordinance and may be required to provide this information upon request.

The Chatham County Planning Department personnel may modify and/or waive any part(s) of the above referenced permit requirements, provided the applicant can otherwise demonstrate compliance with this Code. Note: An example of this provision might be where a contractor or utility repeatedly installs the same lighting equipment on different projects in the county. One submittal containing the specification sheets of a particular group of fixtures may be sufficient for the Lighting Administrator to modify the project requirement and require that only the other provisions of the ordinance be met since the fixture specification provisions have already been met. This modification would conserve county personnel and lighting supplier/installer resources.

SECTION 22 NONCONFORMITIES

1. Any lighting fixture lawfully in place or approved by the county prior to the adoption of this ordinance shall be exempt from these requirements. At the time that a non-conforming fixture is replaced, moved, upgraded, or otherwise changed, the fixture must be brought into compliance with the requirements of this ordinance. Any expansion of, or addition to, an existing lighting system must conform to the requirements of this ordinance.
2. Routine maintenance, including changing the lamp, ballast, starter, photo control, lens, and other required components, is permitted for all existing fixtures. When the fixture housing is changed, the fixture must come into compliance.
3. Major renovation(s) of vehicular canopies (50% or more of the existing light fixtures) will require compliance with this Ordinance.
4. Property owners that install lighting fixtures after the effective date of this ordinance and are found to be in non-compliance shall receive written notification according to this ordinance.

SECTION 23 ENFORCEMENT

Violation of the provisions of this ordinance shall be enforceable as set forth below.

1. **Warning Citation.**

The Lighting Administrator shall have the authority to issue a warning citation in the form of a notice of violation for all violations of this ordinance. The owner, tenant, or occupant of any building or land or any part thereof shall have a copy of the notice of violation delivered by hand delivery or by certified mail. In all other cases, a copy of the notice of violation shall be posted on the property on which the violation occurs. A copy of the notice of violation shall also be delivered by hand delivery or certified mail to the property owner as shown on the Chatham County tax records.

2. **Time to Remedy Violation.**

All violations shall be remedied within thirty (30) days. The thirty (30) day period shall commence upon the service of the notice of violation as set forth above. If after 30 days, no correspondence from the US Postal Service has been received, it is assumed the violation notice has been received and further enforcement action/s may apply.

3. **Extension of Time for Compliance.**

The Lighting Administrator shall have the authority to grant a single thirty (30) day extension of time within which to remedy the violation. An extension of time may be issued based upon a written request for extension of time which sets forth valid reasons for not complying within the original time period.

4. **Remedies for Failure to Comply.**

Pursuant to N.C. General Statutes Section 153A-123 (f), the Lighting Administrator may choose from the remedies set forth below to enforce the requirements of this ordinance when there is a failure to comply with the notice of violation. Those remedies are as follows:

a. In addition to or in lieu of the other remedies set forth in this section, the Lighting Administrator may issue a citation setting forth a civil penalty, pursuant to N.C. General Statutes Section 153A-123.

(1) Civil penalties shall be assessed in the amount of \$50.00 per day for the first violation. For the purposes of assessing civil penalties each day such violation continues shall be considered a separate and distinct offense. The citation shall be served upon the person(s) described in subsection 21.1 by the means set forth therein. In the event the offender does not pay the penalty within 15 days of the issuance of the citation, the civil penalty shall be collected by the county in a civil action in the nature of debt, which shall not subject the offender to the penalty provisions of N.C. General Statutes Section 14-4.

(2) If the same violation occurs on the same property within six (6) years after the initial violation is remedied, a civil penalty in the amount of \$100.00 per day shall automatically apply.

(3) If the same violation occurs on the same property within six (6) years after the second occurrence of the violation is remedied, a civil penalty in the amount of \$200.00 per day shall automatically apply.

(4) If the same violation occurs on the same property within six (6) years after the third or any subsequent occurrence of the violation is remedied, a civil penalty in the amount of \$500.00 per day shall automatically apply.

- b. In addition to or in lieu of the other remedies set forth in this section, the Lighting Administrator shall have the authority to issue a removal order in the form of an order of abatement or injunction for any lighting not brought into compliance with the provisions of this ordinance within the time required by the foregoing provisions. Removal orders shall be issued to and served upon the person(s) described in subsection 23.1 by the means set forth therein. The lighting shall be removed within thirty (30) days after the service of the removal order at the expense of the offender or as ordered by the judicial body issuing the order of abatement or injunction. The removal order shall describe with particularity the location of the lighting to be removed and all of the reasons for issuance of the removal order, including specific reference to the provisions of this Article which has been violated. In addition to or in lieu of the other remedies set forth in this section, the county may seek injunctive relief in the appropriate court.
5. Removal and Recovery of Expense.
In the event of failure to comply with the requirements of a removal order, the Lighting Administrator may cause such lighting to be removed. The lighting owner and property owner may be jointly and severally liable for the expense of removal. Notice of the cost of removal shall be served upon the person(s) described in subsection 21.1 by the means set forth therein. If said sum is not paid within thirty (30) days thereafter, said sum shall be collected by the county in a civil action in the nature of debt, which shall not subject the offender to the penalty provisions of N.C. General Statutes Section 14-4.
6. Stay upon Appeal.
In the event of a timely appeal of a decision of the Lighting Administrator to the Chatham County Board of Adjustment, enforcement of all proceedings and the furtherance of the action appealed from is stayed, unless the Lighting Administrator certifies to the Board of Adjustment that a stay would cause imminent peril to life or property.

SECTION 24 APPEALS AND APPLICATIONS.

1. Types of Appeals.
The Chatham County Board of Adjustment shall hear and decide all appeals from any order, requirement, decision or determination made by the Lighting Administrator. In deciding appeals, it may hear both those based upon an allegedly improper or erroneous interpretation of the ordinance and those based upon alleged hardship resulting from strict interpretation of the ordinance.
2. Procedure for Filing Appeals.
No appeal shall be heard by the Board unless notice thereof is filed within thirty (30) days after the interested party or parties receive notice of the order, requirement, decision or determination by the Lighting Administrator. The applicant must file his application for a hearing with the Lighting Administrator, who shall act as Clerk for the Board in receiving this notice. All applications shall be made upon the form specified for that purpose, and all information required thereon shall be complete before an appeal shall be considered as having been filed.
3. Hearings.

- a. *Time.* After receipt of notice of appeal, the Board Chairman shall schedule the time for hearing which shall be at a regular or special meeting no more than 45 days from the filing of such notice of appeal with the Lighting Administrator.
- b. *Notice of Hearing.* The staff to the Board shall mail notices of the hearing to the affected parties to the action appealed from, and to such other persons as the Lighting Administrator shall direct, at least five (5) days prior to the hearing. Such notice shall state the general nature of the question involved in the appeal, and the time and the place of the hearing. There shall be a published notice of the hearing of each appeal in a newspaper published in the County as required by law.
- c. *Conduct of Hearing.* Any party may appear in person or represented by an agent or attorney at the hearing. The order of business for the hearing shall be as follows:
 - (1) The Chairman, or such person as he shall direct, shall give a preliminary statement of the case;
 - (2) The applicant shall present the argument in support of his application;
 - (3) Persons opposed to granting the appeal shall present the argument against the appeal request;
 - (4) Both sides will be permitted to present rebuttals to opposing testimony;
 - (5) The Chairman shall summarize the evidence which has been presented, giving the parties opportunity to make objections or corrections. Witnesses may be called and factual evidence may be submitted, but the Board shall not be limited to consideration of only such evidence as would be admissible in a court of law. The Board may view the premises before arriving at a decision. All witnesses before the Board shall be placed under oath and the opposing party may cross-examine them.

4. Rehearings.

An application for a rehearing may be made in the same manner as provided for an original hearing. Evidence in support of the application shall initially be limited to that which is necessary to enable the Board to determine whether there has been a substantial change in the facts, evidence, or conditions in the case. The application for rehearing shall be denied by the Board if, from the record, it finds that there has been no substantial change in facts, evidence or conditions. If the Board finds that there has been a change, it shall thereupon treat the request in the same manner as any other application for appeal.

5. Decisions.

- a. *Time.* A decision by the Board shall be made within thirty (30) days from time of hearing.
- b. *Form.* Written notice by certified or registered mail of the decision in a case shall be given to the applicant by the Lighting Administrator as soon as practical after the case is decided. Also, written notice shall be given to owners of the subject property, if not the applicant, and to other persons who have made written request for such notice. The final decision of the Board shall be shown in the record of the case as entered in the minutes of the Board and signed by the clerk to the board and the chairman upon approval of the minutes of the Board. Such record shall show the reasons for the determination, with summary of the evidence introduced and the finding of fact made by the Board. Where a variance is granted, the record shall state in detail any exceptional difficulty or unnecessary hardship upon which the appeal was based and which the Board finds to exist. The decision may reverse or affirm, wholly or partly or modify the order,

- requirement, decision or determination appealed from. The record shall state in detail what if any, conditions and safeguards are imposed by the Board.
- c. *Voting.* The concurring vote of four-fifths of the members of the Board shall be necessary to reverse any order, requirement, decision or determination of the Lighting Administrator.
 - d. *Public Record of Decisions.* The decisions of the Board, as filed in its minutes, shall be a public record, available for inspection at all reasonable times.
6. Appeals from Board of Adjustment.
Appeals from the Board of Adjustment may be taken to the courts, within thirty (30) days of their decision.

SECTION 25 VARIANCES.

1. The Chatham County Board of Adjustment shall have the power to hear and act upon applications for a variance, which meet the following requirements:
 - a. If the applicant complies strictly with the provisions of this ordinance, the applicant can make no reasonable use of the property or lighting allowed; and
 - b. If the hardship of which the applicant complains is unique, or nearly so, and is suffered by the applicant rather than by owners of surrounding properties or the general public; and
 - c. If the hardship relates to the applicant's land (such as the terrain of the site) rather than in personal circumstances; and
 - d. If the hardship is not a result of the applicant's own actions; and
 - e. If the variance is in harmony with the general purpose and intent of this ordinance and preserves its spirit and if the variance secures the public safety and welfare and does substantial justice.
2. In granting a variance, the Board of Adjustment shall make written findings that all of the above listed requirements have been met. If a variance is granted it shall be the least possible deviation from the requirements of this ordinance. In granting any variance, the Board of Adjustment may prescribe appropriate conditions and safeguards in conformity with this ordinance. Violations of the provisions of the variance granted, including any conditions or safeguards, which are a part of the grant of the variance, shall be deemed a violation of this ordinance.

SECTION 26 SEVERABILITY

If any part or provision of this ordinance or application thereof to any person or circumstance is held invalid by any court of competent jurisdiction, such judgment shall be confined in its operation to the part, provision or application directly involved in all controversy in which such judgment shall have been rendered. Such judgment shall not affect or impair the validity of the remainder of this document even without any such part, provision or application.

SECTION 27 ABROGATION

This ordinance is not intended to repeal, abrogate, or impair any greater restrictions imposed on existing easements, covenants, or deed restrictions. Wherever the provisions of any other law, ordinance or regulation impose higher standards than are required by the provisions of this ordinance, the provision of such law, ordinance or regulation shall govern.

SECTION 28 EFFECTIVE DATE

This Ordinance shall become effective on the 1st day of January, 2010.

SECTION 29 ADOPTION CERTIFICATION

The Chatham County Board of Commissioners hereby adopts the Chatham County Lighting Ordinance on the 21st day of September, 2009.

George Lucier, Chair

ATTEST:

Sandra B. Sublett, CMC, Clerk to the Board
Chatham County Board of Commissioners