



REGULAR MEETING OF THE ZONING AND PLANNING BOARD

August 21, 2018

9:30 a.m.

Lake Lure Municipal Center

AGENDA

1. Invocation
2. Roll Call
3. Approval of the Agenda
4. Approval of Minutes from the July 17, 2018 regular Meeting
5. New Business:
 - a. Lighting Regulations
6. Old Business
 - a. Communication Tower Amendments to Accommodate Latest Technology (update)
7. Monthly Report – July 2018
8. Adjourn



**Meeting of the
Zoning and Planning Board
Minutes**

Regular meeting, Tuesday, June 19, 2018

Council Chambers

Present: Thomas M. McKay, Chair
Bruce Barrett
Charlie Ellis
Jonathan Hinkle

Absent: Norman McGlohon, Board Member and Commissioner Moore, Town Council Liaison

Also Present: Brad Burton, Code Enforcement Coordinator

The meeting started at 9:36 am. Chairman McKay led the pledge of allegiance.

Bruce Barrett gave the opening prayer imploring the Almighty to grant wisdom to the Board throughout the deliberations and overall proceeding.

ROLL CALL

Chairman McKay called roll. McGlohon and Moore were absent.

APPROVAL OF THE AGENDA

Charlie Ellis moved the agenda be approved. Jonathan Hinkle gave the second. All voted in favor.

APPROVAL OF THE MINUTES

Regarding approval of minutes from the July 17, 2018 Regular Meeting, **Charlie Ellis moved the minutes be approved. Norman McGlohon gave the second. All voted in favor.**

OLD BUSINESS

Proposed Changes to Standards for Telecommunications Facilities

Burton read his memo and explained the purpose for the materials he provided, specifically:

- 1) Locating Wireless Telecommunication Facilities on a Major Mountain Ridge
- 2) Administrative Review of WTF applications versus the Conditional Use Process
- 3) Restrictive Covenants and Deed Restrictions concerning WTF's
- 4) Ships sink, planes crash, WTF's burn and ultimately not like they are supposed to

The discussion began with the discussing locations for WTF's that are currently prohibited by the zoning regulations. Many up the areas in the Districts are elevated and it was offered that many of these locations might provide the coverage needed.

Chairman McKay asked the question, "But do we know for sure that these locations will work?" Burton responded that he had no idea if they would or not, but the elevated positions would arguably seem to be advantageous in providing more enhanced coverage for the area.

The lack of a definitive answer to this question essentially stalled the meeting. "How do we know if these new regulations, including allowing WTF's in zoning districts previously prohibited, is the answer to the communication needs of the community?" was the summation by Chairman McKay.

Burton responded that he had been tasked with bringing the Board a contemporary set of telecommunications regulations that were in-step with State and Federal mandates. His work product also relaxed some requirements of the previous code, including available districts were the facilities might be sited.

Charlie Ellis suggested asking the Utilities Board for assistance and/or an advisory opinion. This suggestion was favorably received by the Zoning and Planning Board members and subsequently tasked to Burton for follow-up with the Utilities Board.

NEW BUSINESS

Burton advised that he would be bringing a draft of lighting regulations for the next meeting.

Chairman McKay called for adjournment at the appropriate time. Bruce Barrett move the meeting adjourn. Charlie Ellis made the second. All voted in favor. The meeting adjourned at 10:14 am.

ATTEST

Thomas M McKay, Chair

Brad L. Burton, Recording Secretary



TOWN OF LAKE LURE *Community Development Department*

MEMORANDUM

TO: Zoning and Planning Board

FROM: Brad L. Burton, Code Enforcement Coordinator

DATE: August 12, 2018

RE: Lighting Regulations

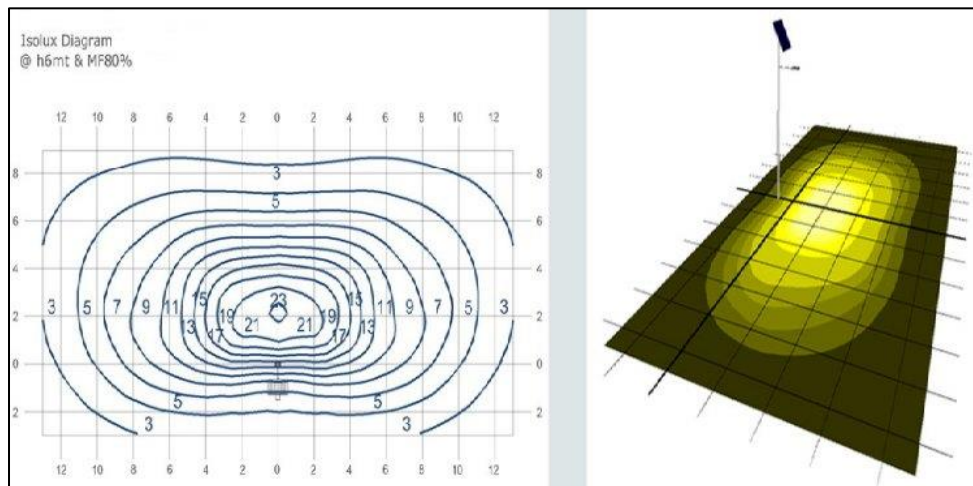
Greetings Zoning and Planning Board members.

Attached herein are a draft set of regulations concerning lighting. Note that these regulations identify what are mostly commercial applications, but there is a bit of spillover into residential applications also. If adopted, it is proposed that these regulations would be located in Chapter 7, "Nonconformance; Off-Street Parking and Loading; General Requirements" as § 92.119 "Lighting."

In a quick summation, these regulations address:

- 1) "Dark-sky" compliant fixtures. All fixtures (streetlights, parking lot lighting, gas station canopies, wall packs, etc.) hereinafter employed shall be "full cut-off" in design.
- 2) Location of lighting on properties
- 3) "Maximum Illumination" values for lighting applications
- 4) Administration of the lighting regulations
- 5) Preparation, required submittals, and review of a required lighting plan
- 6) Exemptions

There is some new language in these regulations such as an "isolux lighting plan," as an option (or addition) to a new development lighting plan. Such a plan indicates, per the fixture manufacturers published detail, how the light fixture affects its surroundings by illustrating the light affects at grade.



Using the example as above, which indicates one fixture, an isolux lighting plan for a large shopping center parking lot, or a large building employing wall packs, when incorporated with a topographic survey can allow the reviewer to “see” the effects of the installed fixtures. By means of the diagram, the reviewer can determine if the light is crossing property boundaries at an amount disallowed by the regulations, or exceeds maximum illumination.

For the purpose of comparison, below are the current lighting standards as required by the Town for any structure or associated development requiring a Conditional Use Permit:

§ 92.058 CONDITIONAL USE OUTDOOR LIGHTING STANDARDS AND REQUIREMENTS

- (A) Conformance. All proposed outdoor artificial illumination devices for a conditional use shall be installed in conformance with the provisions of this Section and the North Carolina Building Code. Where there is a conflict between the provisions of this section and applicable provisions of the North Carolina Building Code, the most restrictive shall govern. **(Adopted 11-15-05)**
- (B) Materials and Installation. The provisions of this section are not intended to prevent the use of any equipment, material or method of installation not specifically prescribed by this section provided the Board of Adjustment has approved the alternative. The Board of Adjustment may approve any such alternative provided that the proposed design provides the approximate equivalence to the specific requirements of this Section. **(Adopted 11-15-05)**
- (C) Shielding. All outdoor lighting fixtures including decorative luminaries except those exempted by Section 92.058(G) shall be fully shielded as specified in this Section. A fully shielded outdoor lighting fixture must be shielded or constructed so that all light emitted is projected below a horizontal plane which is parallel to the ground and runs through the lowest part of the fixture. **(Adopted 11-15-05)**
- (D) Light Trespass. The maximum illumination at five (5) feet inside an adjacent residential area, or public right of way, or beyond, from light emitted from an artificial light source is 0.5 horizontal foot candles and 0.5 vertical foot candles. No line of site to a bulb is permitted five (5) feet or more beyond a residential property line or public right-of-way line by an observer viewing from a position that is level with or higher than the ground below the fixture. Compliance is achieved with fixture shielding, directional control designed into the fixture, fixture location, fixture height, fixture aim, or a combination of these factors. **(Adopted 11-15-05)**
- (E) Duration of Use. All unnecessary outdoor lighting fixtures shall be turned off after the close of business. However, fixtures nearest building entryways may remain lighted at minimum intensity for safety and security. **(Adopted 11-15-05)**
- (F) Canopies. The lighting fixture bulbs shall be recessed into a canopy ceiling so that the bottom of the fixture is flush with the ceiling so that light is restrained to no more than eighty-five (85) degrees from vertical. As an alternative to recessed ceiling lights, indirect lighting may be used where the light is directed upward and then reflected down from the underside of the canopy. In this case, light fixtures shall be shielded so that direct illumination is focused exclusively on the underside of the canopy. The lighting for such facilities, such as pump islands and under canopies shall have a maximum of fifteen (15) foot candles average,

maintained at grade. **(Adopted 11-15-05)**

(G) Exemptions. Fixtures including the following are exempt from regulation: incandescent fixtures (other than floodlights or spotlights) less than one-hundred and sixty (160) watts, natural gas or liquid propane lights, and any light source of one-thousand eight hundred (1800) lumens or less. **(Adopted 11-15-05)**

There is also mention of lighting standards within the Town's Mountain and Hillside Development Standards:

- §92.07(E) Outdoor Lighting. While lighting outside of homes is often necessary, it can be quite obtrusive in the night skyline. Mountainous and hillside areas are generally rural in character and should be maintained as such even in the presence of development. The following shall apply to the placement of outside lights: **(Adopted 11-18-08)**
- (1) Except for landscaping lighting not exceeding a height of 24 inches, all lights shall have fully-shielded fixtures that direct the light downward. These shields shall eliminate scattered light and excessive glare. **(Adopted 11-18-08)**
 - (2) Light poles shall not exceed the height of surrounding buildings. **(Adopted 11-18-08)**

I look forward to discussing these regulations with the Board!

Suggested motion: I move staff place this amendment in an ordinance form and forward to Town Council for adoption. I further move that the Board finds this amendment is consistent with adopted Policy CA-1-4.1(1) of the 2007-2027 Comprehensive Plan.

LIGHTING

Purpose and intent.

The purpose of this chapter is to control light spillage and glare so as not to adversely affect motorists, pedestrians, and land uses of adjacent properties. Lighting intensities should be controlled to assure that excessive light spillage and glare are not directed at adjacent properties, neighboring areas, and motorists.

Levels of illumination to achieve a certain function or desired effect should also reduce or eliminate the hazardous aspects and nuisance of glare and light spillage. All exterior lighting, with the exception of street lighting, that is used around buildings, recreation areas, parking lots, and signs, shall be designed to protect against the spillage of light to adjacent properties.

11.2. - Outdoor lighting standards.

All outdoor lighting shall conform to the following standards:

- A. Outdoor lighting shall not shine directly into the yard or into the windows of an adjacent residence.
- B. Outdoor lighting shall be designed, located, and mounted at heights no greater than 18 feet above grade for pedestrian lights, or 35 feet above grade for street or parking area lights.
- C. Light sources may be located within the perimeter landscaped area and along pedestrian walkways.
- D. All outdoor and parking lot lighting fixtures, including: 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.
- E. All lighting must be located at least ten feet from property lines defining rear and side yards or required perimeter landscaped areas required by this Code.
- F. All outdoor lighting shall be designed and located such that the maximum illumination measured in foot-candles at the property line shall not exceed one foot candle. The average intensity illumination for outdoor lighting shall not exceed four foot candles in intensity (except where noted) as measured at grade. Fixtures should be placed to provide uniform distribution of light and to avoid intense lighting that produces excessive glare. General parking lot lighting shall not exceed a maintained average of two and one-half foot-candles.
- G. Lighting fixtures scaled for pedestrian activities shall provide for uniform lighting distribution to produce minimal shadows.
- H. Floodlights, spotlights or any other similar lighting shall not be used to illuminate buildings or other site features unless approved as an integral architectural element on the development plan. On site lighting may be used to accent architectural elements and not be used to illuminate entire portions of building(s). Floodlights or other type of lighting attached to light poles that illuminate the site and/or building(s) are prohibited.
- I. Outdoor illumination of building, landscaping and signs:
 - 1. Exterior lighting should be integrated with the architectural character of the building. To avoid light spillage, only full cutoff fixtures shall be used.
 - 2. The unshielded outdoor illumination of any building or landscaping is prohibited.
 - 3. Lighting fixtures used to illuminate an outdoor advertising sign either shall be by directed ground lighting sign or mounted on the top of the sign, and shall comply with shielding requirements.
- J. No flickering, rotating, or flashing lights, or search lights shall be permitted.

- K. Wall packs on buildings may be used at entrances to a building to light unsafe areas. They are not intended to draw attention to the building or provide general building or site lighting. Wall Packs on the exterior of the building shall be fully shielded (true cut-off type-bulb or light source not visible from off-site) to direct the light downward and be of low wattage (preferably 100 watts or lower). Other accent lighting projected onto buildings may be allowed provided that it is approved through the development plan process.
- L. Gas station/convenience store aprons and canopies:
1. The lighting fixture bulbs shall be recessed into a canopy ceiling so that the bottom of the fixture is flush with the ceiling so that light is restrained to no more than 85 degrees from vertical.
 2. As an alternative to recessed ceiling lights, indirect lighting may be used where the light is directed upward and then reflected down from the underside of the canopy. In this case, light fixtures shall be shielded so that direct illumination is focused exclusively on the underside of the canopy.
 3. Lights shall not be mounted on the top or sides (facia) of the canopy, and the sides of the canopy shall not be externally illuminated.
 4. The lighting for new facilities (pump islands and under canopies) shall have a minimum of 1.0 foot-candle at grade and not exceed the average horizontal illumination cannot exceed 10 foot-candles at grade level. These standards are based on the IESNA (Illuminating Engineering Society of North America) RP-33, Lighting for Exterior Environments.
- M. Canopies used for building accents over doors, windows, etc. shall not be internally lit (i.e. from underneath or behind the canopy).

11.3. - Design procedures.

The maximum permitted illumination shall be measured in average foot-candles from ground level in accordance to the standards expressed in this chapter. The following standards shall be required of all exterior lighting with the exception of public street lighting.

The quantity of fixtures to be provided shall be based upon the desired level of uniform illumination as established by the current standards of the IESNA. Fixture locations should be chosen to minimize the hazards of glare.

The level of illumination shall be based upon the primary activity in each area to be lighted. The standards for various activities prescribed by the following Illuminating Engineering Society chart represent a number of exterior lighting uses for general reference. Foot-candle designations represent measurements for the average intensity at grade.

USE	Illumination (in Foot-Candles)	
	Maximum (Glare)	Minimum (Safety)
UTILITY LIGHTING		
Minimum Visibility	—	.5
Driving	1	.5

Pedestrian Ways	1	.5
General Landscaped Areas	2	1
AREA LIGHTING		
Gas Station and Convenience Store Canopies	10	1
Parking Lots	4	1
BUILDING EXTERIORS		
Entrances (frequent use)	6	2
Entrances (infrequent use)	1	.5
Vital Locations or Structures	6	2
Building Surroundings	2	1

11.4. - Outdoor recreational lighting.

Because of their unique requirements for nighttime visibility and limited hours of operation, the lighting of active recreation areas, such as for ball fields and tennis courts are not considered in this chapter. However, lighting fixtures for such uses shall be mounted and aimed so that the illumination falls within the primary playing area and immediate surroundings so that no direct light illumination is directed off site. Lights shall be turned off within of the end of any event.

11.5. - Street lighting.

Street lighting shall be placed on all streets by the developer to ensure for the safe use of streets by both cars and pedestrians. All street lighting shall be placed in accordance with the following minimum design standards:

- A. Minimum average street light spacing:
 1. *Single family homes and duplex lots (greater than 100 feet wide):* 500 feet.
 2. *Single family homes and duplex lots (less than 100 feet wide):* 300 feet.
 3. *Multi-family uses:* 150 feet.
 4. *All other uses:* 300 feet.
- B. Preference in placement shall be given to street intersections and street curves.
- C. Pedestrian lighting should be prioritized over automobile lighting. Lighting should be placed in a manner to limit the casting of shadows on sidewalks.

- D. All lighting shall utilize full-cut-off fixture.
- E. Alleys are excluded from the spacing and placing requirements of this chapter but are encouraged to be illuminated using private security lights, wall packs, or similar low level decorative lighting.
- F. The requirement that street lights be provided may be waived by the approving authority in mountainous areas where street lights would be visible from the valley floor.

11.6. - Administration.

- A. *Measurement.* 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 public street right-of-way that adjoins the property. Measurements shall be made at finished grade (ground level), with the light-registering portion of the meter held parallel to the ground and pointing upward. Lighting levels are to be measured in foot-candles with a direct reading, portable light meter. The meter sensor shall be mounted not more than six inches above ground level in a horizontal position.

Light levels are specified, calculated and measured in foot-candles (FC). All FC values in 12.3 are in maintained foot-candles.

- B. *Lighting plan.*

1. A lighting plan shall be submitted with all land development permit applications proposing the establishment of outdoor lighting.
 - a. A site plan drawn to scale showing building(s), landscaping, parking areas, and proposed exterior lighting fixtures.
 - b. Location of all post, canopy, supports, and light fixtures, including the height of each fixture, for any building, structure, parking, display and loading areas.
 - c. Specifications of the illuminating devices, lamps, supports, and other Devices, including designation as IESNA "cut-off" fixtures. This description may include but is not limited to manufacturers catalog cuts, enlarged or reduced to the correct scale of the site plan, and drawings including sections where required.
 - d. Locations of all pole mounted and building mounted fixtures and a numerical 25-foot by 25-foot grid of lighting levels, in foot-candles, that the fixtures will produce on the ground (photometric report). The photometric report will indicate the minimum and maximum foot-candle levels within the lighted area of the site. The minimum (lowest number) is usually at the outer edges of the illuminated area or between two fixtures. The average light level is determined by adding the foot-candle value of all the points in the grid and dividing by the total number of points. This information is available from the manufacturer of the specified fixture.
2. The above required plans and descriptions shall be sufficiently complete to enable the administrator to readily determine compliance with the requirements of this Chapter.
3. An isolux lighting plan is also permitted in fulfillment of this section provided that it indicates the foot-candles at grade by contour diagram or grid points that cover the site.

11.7. - Exemptions.

- A. The following types of lighting are exempt from these requirements:
 1. Lighting of the United States of America or State of North Carolina flags and other non-commercial flags expressing constitutionally protected speech.
 2. Circus, fair, carnival, or other similar civic/community events.

3. Construction and emergency lighting are exempt from the provisions of this chapter provided said lighting is temporary and is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.
4. Underwater lighting used for illumination of swimming pools and fountains is exempt from shielding standards.
5. Religious/holiday decorations lighting (i.e. Christmas trees and lighting).