

PLANNING AND DEVELOPMENT SERVICES STAFF REPORT

For Planning Commission Meeting of July 21, 2020

SUBJECT: Amendments to Chapter 55 (Unified Development Code) to Chapter 55, Unified Development Code: Section 5.25 Outdoor Lighting

PROPOSED CITY PLANNING COMMISSION MOTION

The Ann Arbor City Planning Commission hereby recommends that the Mayor and City Council approve the amendments to Chapter 55 Unified Development Code: replace Section 5.25 Outdoor Lighting; add Section 5.33.6 Nonconforming Lighting Installations; and add thirteen definitions to 5.37.2 Specific Terms; in order to more effectively regulate outdoor lighting throughout the City.

STAFF RECOMMENDATION:

Staff recommends that the amendments to the Unified Development Code be **approved**.

SUMMARY:

Section 5.25 of the Unified Development Code (UDC) currently regulates outdoor lighting. The standards are basic and apply mainly to parking lots in site plan projects, where minimum light levels are required throughout the night while allowing only a few site-planned exceptions in residential neighborhoods. Non-parking lot lighting has general requirements for shielding and screening.

A working group comprised of Planning Commission, Energy Commission, Environmental Commission members, and others have collaborated to create a draft ordinance with the assistance of several local lighting activists and experts. Staff reviewed and revised the ordinance for consistency with Chapter 55. The amendments were presented at the November 26 Ordinance Revisions Committee meeting and at the May 12, 2020 Working Session of the Planning Commission. Comments from Planning Commissioners have been incorporated into the current draft, including the removal of language that would limit the brightness of temporary commercially-installed light displays such as holiday building wrapping and tree wrapping.

Major points of the proposed amendments include:

- New residential construction, and site plan projects, shall submit a lighting plan that is compliant with Section 5.25.
- Temporary light installations on private property are allowed for 90 days in the exemptions. This could include holiday lights, art installations, special event lighting, etc.
- Light trespass is limited to certain levels at the property line. Properties abutting residential zones have the strictest limits; D1 and D2 districts allow higher levels of light.

- New light fixtures are to be fully or partially shielded, depending on the type of installation.
- Decorative building and landscaping illumination is largely prohibited between midnight and 6am, except for businesses open during those hours.
- Parking lot lighting is limited to 6 foot candles and must be extinguished beyond business hours for non-residential uses. Currently, the UDC requires less than one footcandle of lighting minimum, but it must remain on all night. No maximum is specified.
- Nonconforming lighting must be brought into compliance when an application for a site plan is made or an exterior electrical permit is applied for. Examples of this work might include installing new exterior light fixtures, replacing an illuminated sign, or adding/replacing an air conditioning unit or other mechanical unit.

PROPOSED AMENDMENTS:

The existing Section 5.25 Outdoor Lighting will be replaced in full with the new Section 5.25 below. Section 5.33.6 Nonconforming Lighting Installations is new, and thirteen definitions are proposed to be added to 5.37.2 Specific Terms.

Article IV: Development Standards

5.25 Outdoor Lighting

5.25.1 Purpose

The purpose of this Lighting Ordinance is to:

- A. Minimize adverse impacts of lighting such as Light Trespass, Glare and Skyglow.
- B. Protect the natural environment from artificial light at night.
- C. Promote energy efficiency.
- D. Foster an environment that supports and/or enhances commerce and lawful nighttime activities.

5.25.2 Applicability

- A. All lighting that causes exterior illumination after sunset and before sunrise shall be subject to the requirements of this Section 5.25.
- B. Permits for new construction of single-family and two-family residences, and applications for all site plan projects, shall include lighting plans showing location, type, height, CCT, CRI, Lumen output, Illuminance, and number of all Luminaires and exterior lighting control systems. The applicant shall provide sufficient information to verify that lighting conforms to the provisions of Section 5.25.
- C. For all electrical permits for exterior lighting, applications shall provide sufficient information to verify that the proposed lighting conforms to the provisions of Section 5.25.

5.25.3 Exemptions

The following Luminaires and lighting system are exempt from the provisions of this Lighting Ordinance.

- A. Any temporary light installation on private property is permitted for a total of 90 days in one calendar year. Examples include seasonal decorative lighting and lighting for temporary public art installations, screenings, performances, and art fairs.
- B. Lighting for flags of the United States of America and the State of Michigan.
- C. Any light installation determined by the Historic District Commission to contribute to the historic character of a property listed in a local or state historic district or on the National Register of Historic Places.

5.25.4 Exterior Lighting Specifications

A. Color Spectrum Management

- 1. All permanent non-residential and multi-family lighting installations shall have a minimum Color Rendering Index (CRI) of 70.
- 2. All permanent non-residential and multi-family lighting installations shall have a Correlated Color Temperature (CCT) of no greater than 3000 K.

B. Luminaire Design and Installation

- 1. Light Trespass
 - a. Light Trespass beyond the property line shall at no time exceed 0.1 Foot-Candle onto any property that is in a Residential Zoning District or zoned PL Public Land, or in the public right of way.
 - b. In the D1 Downtown Core and D2 Downtown Interface districts, the total Illuminance from all sources at the property line shall not exceed 8 Foot-Candles, except for under-canopy lighting, which shall comply with Section 5.25.4.B.8.
 - c. In all other zoning districts, Light Trespass beyond the property line shall at no time exceed 2 Foot-Candles onto any property.
 - d. In D1 Downtown Core and D2 Downtown Interface districts, the Illuminance shall be measured facing up, at a distance three feet above the ground. In any other district, the illuminance shall be measured facing the Luminaire and measured at any point within the receiving property, including at any height above grade at the property line.
- 2. No Luminaire in any district shall cause Glare onto any property in a Residential Zoning District or zoned PL Public Land, or onto the public right of way.
- 3. Where lighting targets primarily the ground or horizontal targets, including but not limited to parking areas, loading docks, recreational areas, and site entrances, Luminaires shall meet Fully Shielded criteria, so that no light will cause Light Trespass as specified in Section 5.25.5.B.1, or Glare.
- 4. Where lighting targets primarily features above grade or vertical targets, including but not limited to architectural features, signs, landscaping, fountains, and sculptures, Luminaires shall be Partially Shielded and shall

be installed and aimed to minimize their output past the object being illuminated, skyward or otherwise. Such lighting shall not cause Light Trespass as specified in Section 5.25.5.B.1, or Glare.

5. If a building façade is more than 10 feet from the property line, the maximum average Illuminance on the facade shall be 1 Foot-Candle on any property in a Residential Zoning District or zoned PL Public Land, and 3 Foot-Candles on any property in any other zoning district, as measured at a distance of 10 feet from the facade, provided that the Illuminance does not violate the Light Trespass limit specified above in Section 5.25.4.B.1. The measurement shall be made facing the facade. Facade illumination from above, rather than below, is strongly encouraged and must be shielded from Glare as specified above in Section 5.25.5.B.3. If a façade is less than 10 feet from the property line, then the provisions in Section 5.25.4.B.1 shall apply to façade lighting. Facades in D1 and D2 districts, and facades situated less than 10 feet from a building on the same parcel are exempt from this Section 5.25.4.B.5.
6. **Decorative Building Façade and Landscape Illumination**
 - a. For properties in a Residential Zoning District or zoned PL Public Land, Illumination for building facades and/or landscapes whose primary purpose is decorative or for advertising is prohibited between 12:00 am and 6:00 am.
 - b. In all other districts, it is prohibited between 12:00 am and 6:00 am except during Business Hours. The lighting shall be controlled by an automated timer system.
7. Motion-activated lighting systems shall not be activated by movement beyond the property boundary.
8. Under-canopy lighting for such applications as gasoline service stations, hotel or theater marquees, or Drive Through Facilities shall be Fully Shielded. Except in D1 Downtown Core and D2 Downtown Interface districts, the average maintained horizontal Illumination in the area directly below the canopy shall not exceed 20 Foot-Candles, with no value exceeding 30 Foot-Candles. In the D1 and D2 districts, the average horizontal Illumination shall not exceed 80 Foot-Candles.
9. Wall- or pole-mounted floodlights shall be aimed no higher than 45 degrees below horizontal, and they must comply with shielding and Light Trespass limits as specified in Section 5.25.5.B.1 and 5.25.5.B.2.
10. The following lighting systems are prohibited: Any dynamically changing lights, including strobe lights, or lights that are programmed to be flashing, blinking, or moving.

C. Parking Lots

1. Parking lots shall not exceed maximum Illuminances at all unobstructed points of 6 Foot-Candles at any time after sunset and before sunrise. Illuminances shall be measured facing upward, three feet above the lot surface.

2. Lighting for parking areas and vehicular and pedestrian traffic ways on sites that contain no residential uses shall be extinguished nightly beyond Business Hours. For after-hours site safety lighting, or uses with no Business Hours, lighting after sunset and before sunrise shall not be in excess of 2 Foot-Candles.

5.25.5 Indoor Lighting

Indoor lighting shall not be the source of exterior Light Trespass or Glare as specified in Section 5.1.5.B.1 and 5.1.5.B.2 above.

Article VI: Nonconformities

5.33 Special Standards

5.33.6 Nonconforming Lighting Installations

Nonconforming lighting installations may be used, maintained, or repaired in the same form and type as they existed at the time they became nonconforming. Upon the first occurrence of any of the following, all exterior lighting installations shall be brought into compliance with Section 5.25 Outdoor Lighting:

- A. An application for any site plan or plat, or an electrical permit for an exterior modification;
- B. Issuance of a certificate of occupancy for a property previously determined by the Building Official to be abandoned for at least six (6) months;

Article VIII: Definitions

5.37.2 Specific Terms

Business Hours

The period from one-half hour before to one-half hour after established hours of operation.

Color Rendering Index (CRI)

A standard measure of how closely the color spectrum of a light source corresponds to that of a pure thermal spectrum, for sources having CCT < 5000 K. A value of CRI = 100 indicates perfect correspondence.

Correlated Color Temperature (CCT)

Quantity describing the perceived color of light. It is specified by the temperature of a pure thermal spectrum having the same perceived color. The corresponding thermal temperature is ordinarily given in degrees Kelvin.

Foot-Candle

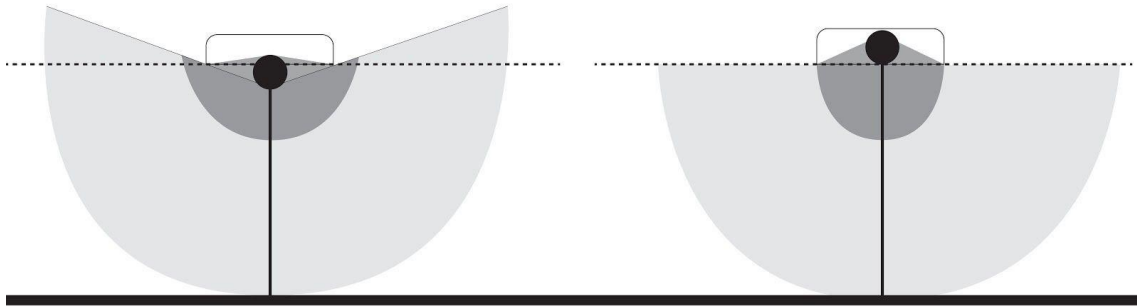
Measurement unit for Illuminance, corresponding to one Lumen of light falling on a one square-foot surface. This brightness is measurable with a light meter. One foot-candle = 10.76 Lux. One foot-candle is the Illuminance of a surface by a candle at a distance of

one foot.

Fully Shielded

Designation for a Luminaire from which no light is emitted at or above a horizontal plane drawn through the lowest light-emitting portion.

POLE LIGHT



NON-COMPLIANT LIGHT

COMPLIANT FULLY SHIELDED

WALL MOUNTED LIGHT



NON-COMPLIANT LIGHT

COMPLIANT FULLY SHIELDED

Glare

Excessive brightness from a light source whose contrast against the background causes impaired vision or physical discomfort.

Illuminance

Brightness of light falling on a surface or plane perpendicular to the direction of the light source; illumination. Illuminance is measured in Foot-Candles or Lux (metric system); illumination.

Light Trespass

Light that is cast beyond the boundary of the property on which the lighting installation is sited.

Lumen

Measurement unit for the power per solid angle of visible light emitted by a source. A 60-watt incandescent bulb produces about 800 Lumens.

Luminaire

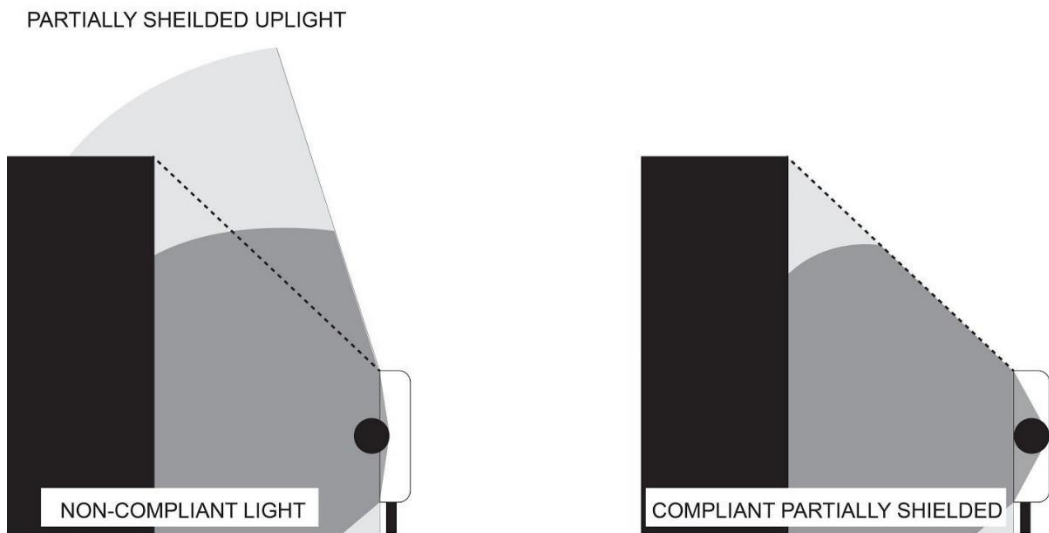
A complete lighting unit consisting of one or more light-emitting devices together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply, excluding the mounting surface or pole.

Lux

Measurement unit for illuminance on a surface that is everywhere one meter from a uniform point source of one candle intensity or equal to one Lumen per square meter. This brightness is measurable with a light meter.

Partially Shielded

Designation for a Luminaire from which some light is emitted at or above a horizontal plane drawn through the lowest light-emitting portion, for the purpose of illuminating specific targets above grade. Any light from the Luminaire that is not illuminating the target must be Fully Shielded.



Skyglow

Unnatural brightening of the night sky due to artificial light at night.

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