

**AN ORDINANCE
AMENDING THE MUNICIPAL CODE OF THE CITY OF OZARK, MISSOURI,
CHAPTER 405 ZONING REGULATIONS, TO ESTABLISH ONE NEW SECTION
REGULATING DARK SKIES DESIGN STANDARDS.**

WHEREAS, City staff was asked to draft and propose language to address light pollution in the community with the goal of balancing the impact to development while preserving the visibility of the night sky; and

WHEREAS, the proposed language establishes Design Standards for on-site lighting, which is defined herein to be all non-public owned, installed, or maintained lighting on all property except for single-family and two-family residential properties; and

WHEREAS, on May 24, 2021, the Planning and Zoning Commission voted unanimously to recommend this Ordinance for approval.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF OZARK, MISSOURI, as follows, that:

SECTION 1 – Amending the Municipal Code of the City of Ozark, Missouri, Chapter 405 Zoning Regulations, Article IX Miscellaneous Regulations, by adding one new section, Section 405.950 Dark Skies Design Standards which shall read as follows:

Section 405.950 Dark Skies Design Standards

A. *Definitions.* Except where otherwise indicated by the context, the following definitions shall apply in the interpretation and enforcement of this Chapter:

BACKLIGHT-UPLIGHT-GLARE (BUG)

A luminaire classification system that classifies backlight (B), uplight (U), and glare (G). This rating system provides for more effective control of unwanted light.

CUTOFF FIXTURE

An outdoor light fixture shielded or constructed in such a manner that no more than two and one half (2.5) percent of the total light emitted by the fixture is projected above the horizontal plane of the fixture.

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 different use, 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 cast onto a given point, measured as one (1) lumen per square foot.

FULL CUTOFF FIXTURE

An outdoor light fixture shielded or constructed in such a manner that it emits no light above the horizontal plane of the fixture.

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.

LIGHT FIXTURE

An electrical device that contains an electric lamp that provides illumination consisting of a fixture body and one or more lamps.

LIGHT SOURCE

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

LIGHT SPILLOVER

The light that can be measured on a property when that same light is generated from another property.

LUMEN

A quantitative unit measuring the amount of light emitted by a light source.

ON-SITE LIGHTING

All lighting that is not owned, installed, or maintained by a public utility located on properties that are not primarily a single-family residential use and/or two-family residential use. This shall include but not be limited to the following: site or buildings, neighborhood common areas such as club houses, pools, and parking lots.

SEMI-CUTOFF FIXTURE

An outdoor light fixture shielded or constructed in such a manner that it emits no more than five (5) percent of its light above the horizontal plane of the fixture, and no more than twenty (20) percent of its light ten (10) degrees below the horizontal plane of the fixture.

- B. *Purpose.* The purpose of this section is to regulate the placement and arrangement of all on-site lighting as defined in this Section. These regulations are intended to:

1. Protect the public health, safety, and general welfare;
2. Enable the fair and consistent enforcement of these regulations;
3. Control light spillover and glare to reduce the degradation of the sky from light pollution;
4. Encourage lighting systems which conserve energy and costs;
5. Preserve community character; and
6. Provide for nighttime safety, utility, security, and productivity.

C. *Application of Dark Skies Design Standards.*

All on-site lighting shall meet or exceed the Dark Skies Design Standard provisions in this Section.

D. *Exterior Lighting Objectives.* Lighting arrangements shall be arranged in the following manner:

1. To minimize light spillover onto any adjacent premises; and
2. So that light from any illuminated source shall be so shaded, shielded or directed that the light intensity or brightness will not adversely affect adjoining property.

E. *Lighting Measurements.* Light levels shall be measured in the following manner:

1. At the property line; or
2. At the boundary of public right-of-way that adjoins the property; and
3. At finished grade (ground level), with the light-registering portion of the meter held parallel to the ground pointing up; and measured in footcandles (FC).

F. *Exterior Lighting Standards.* All exterior on-sight lighting shall be subject to the following conditions and limitations:

Light Source	Maximum Mounting or Pole Height	Maximum Lumination
No cutoff	15 feet	<ul style="list-style-type: none"> • 3/10 footcandle at any point along perimeter adjoining single or two-family residential use • 3/10 footcandle if separated from single or two-family residential use by a right-of-way of seventy (70) feet or less
Total cutoff of light at an angle so that the bare bulb, lamp, or light source is completely and opaquely shielded from the direct view of an observer at ground level at the perimeter of the property	60 feet	<ul style="list-style-type: none"> • 1/2 footcandle at any point along perimeter adjoining single or two-family residential use • 1/2 footcandle if separated from single or two-family residential use by a right-of-way of seventy (70) feet or less • One (1) footcandle at any other point along the perimeter of the property. • There are no maximum lumination limits at the property line of the same zoning classification.
Building and landscape light fixtures, including ground lighting for signs, flagpoles and statues, shall be equipped with shields or shutters to minimize light spillover		<ul style="list-style-type: none"> • 1/2 footcandle at any point along perimeter adjoining single or two-family residential use • 1/2 footcandle if separated from single or two-family residential use by a right-of-way of seventy (70) feet or less • One (1) footcandle at any other point along the perimeter of the property.

Lighted Areas	Maximum Mounting or Pole Height	Maximum Lumination
Parking Lots		<ul style="list-style-type: none"> • Average of five (5) footcandles
Downtown Neighborhood and Core Overlay Districts		<ul style="list-style-type: none"> • shall not exceed a color temperature of 3000 Kelvin.
Bufferyard	N/A	<ul style="list-style-type: none"> • Light sources shall not be located within bufferyard areas except on pedestrian walkways.

There shall be no lighting of a blinking, flashing, rotating, or fluttering nature, including changes in light intensity, brightness, or color except for public safety purposes.

Luminaire	Maximum Allowed Backlight Rating	Maximum Allowed Uplight Rating	Maximum Allowed Glare Rating	Maximum Allowed Glare Rating *If NOT mounted with backlight perpendicular to property line within 2X mountings heights
Greater than 2 mounting heights from property line	B4	U2 0% Allowed light emission above 90° for street or Area lighting	G2	G2
1 to less than 2 mounting heights from property line and the backlight portion of light output oriented perpendicular and toward said property line.	B3	U2 0% Allowed light emission above 90° for street or Area lighting	G2	G1

0.5 to 1 mounting heights from property line and the backlight portion of light output oriented perpendicular and toward said property line.	B2	U2 0% Allowed light emission above 90° for street or Area lighting	G2	G0
Less than 0.5 mounting height to property line and the backlight portion of light output oriented perpendicular and toward said property line.	B0	U2 0% Allowed light emission above 90° for street or Area lighting	G2	G0

1. A site lighting plan for on-site lighting shall be submitted and shall provide the following information:
 - a. Proposed location on premises of all exterior light fixtures;
 - b. Description of illumination devices, fixtures, lamps, supports, reflectors and lens, mounting height and wattage;
 - c. Photometric design layout for the site of all illuminated vertical and horizontal surfaces showing the design footcandle levels.
 - d. Lighting shall be significantly reduced during non-operational hours, allowing only lighting necessary for security purposes. The site lighting plan submitted for review shall note where this distinction occurs.
 2. Signs not internally lit shall comply with exterior or building lighting standards provided above.
- G. *Existing Lighting.* Any existing lighting fixture that is moved or replaced in its entirety, shall meet the requirements of this section. Specifically, this shall not include replacing bulbs or bulb maintenance.
- H. *Exemptions.* The following shall be exempt from the Dark Skies Design Standards contained in this section:
1. *Emergency Lighting.* Emergency lighting that is only turned on in the event of a power failure or when an alarm is activated is excluded from the total lumen

calculations for the site. Use of such lighting outside of an emergency is strictly prohibited.

2. Emergency Services Lighting. Searchlights, floodlights, laser source lights, strobe or flashing lights, or any similar high intensity lights are permitted for use by police, fire, medical, or utility personnel or at their direction.
3. Infrared Security Lighting. Lights emitting infrared radiation for remote security systems is permitted with the following restrictions:
 - a. Fixed lights must be fully shielded; and
 - b. Movable lights, such as spotlights, must be mounted so that the lights cannot be directed higher than twenty (20) degrees below the horizontal.
 - (1) Light must be measured from the center of the beam to determine the threshold.
4. Outdoor recreational uses. Ball diamonds, playing fields, and tennis courts due to their unique requirements for nighttime visibility and their limited hours of operation, but must comply with the following conditions:
 - a. Illuminating Engineering Society (IES) lighting guidelines (RP-6) are followed according to the appropriate class of play; and
 - b. Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications; and
 - c. Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance); and
 - d. Off-site impacts of the lighting will be limited to the greatest practical extent possible; and
 - e. A strict curfew of 10:00 p.m. or one hour after the end of play is observed; and
 - f. Timers must be installed to prevent lights being left on accidentally overnight by automatically extinguishing them.
5. Temporary seasonal/holiday lighting from one month before and one month after a federally observed holiday. Low voltage holiday lighting, whether shielded or unshielded that does not create a hazard or nuisance to surrounding businesses or residences. Permanently exposed string lights are permitted as a white light clear bulb as accent lighting. Permanent lighting shall not consist of blinking or chasing lights, and shall be tightly fastened to the building.

SECTION 2 – Severability Clause. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board of Aldermen hereby declares that it would have adopted the Ordinance and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

SECTION 3 – This Ordinance shall be in full force and effect from and after its passage and approval.

PASSED AT MEETING ON JULY 6, 2021.

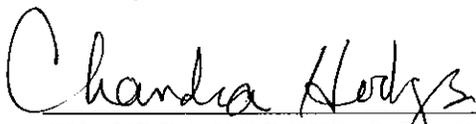
	AYE	NAY	ABSENT/ABSTAIN
ALDERMAN NATHAN POSTEN	X		
ALDERMAN BRUCE GALLOWAY	X		
ALDERMAN HEATHER ALDER	X		
ALDERMAN EDDIE CAMPBELL	X		
ALDERMAN RICK GARDNER	X		
ALDERMAN RJ FLORES	X		

APPROVED ON JULY 6, 2021



BRADLEY ALAN JACKSON, MAYOR

ATTEST:



CHANDRA HODGES, CITY CLERK