

ORDINANCE O-19-06

**AN ORDINANCE OF THE CITY OF BISBEE, AMENDING THE CITY CODE,
ARTICLE 7, LIGHT POLLUTION, AND PROVIDING FOR REPEAL AND
SEVERABILITY**

WHEREAS, to facilitate dark skies, the City of Bisbee seeks to regulate outdoor lighting to minimize adverse offsite impacts of lighting such as light trespass and obtrusive lighting;

WHEREAS, the City permits the use of outdoor lighting that does not exceed the minimum levels specified in this Ordinance for night-time safety, sporting events, utility, security, productivity, enjoyment, and commerce;

WHEREAS, the curtailment of light pollution will improve nighttime environment for astronomy, conserve energy, and protect the natural environment; and

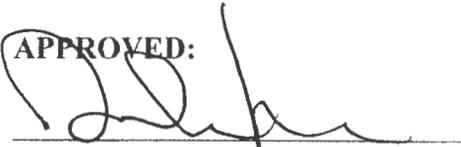
WHEREAS, it is in the best interests of the City of Bisbee and its citizens to adopt this amendment to the City Code set forth on Exhibit A hereto.

**NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF
THE CITY OF BISBEE, COUNTY OF COCHISE, STATE OF ARIZONA, THAT:**

Section 1. The amendments to Article 7 of the City Code, as set forth in the attached Exhibit A, incorporated herein by reference, are hereby adopted.

Section 2. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions.

PASSED, APPROVED AND ADOPTED by the Mayor and Council of the City of Bisbee on this 3rd day of December, 2019.

APPROVED:


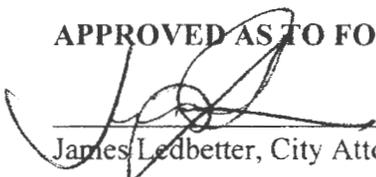
David Smith, Mayor

ATTEST:



Ashlee Coronado, City Clerk

APPROVED AS TO FORM:



James Ledbetter, City Attorney

EXHIBIT A

ARTICLE 7.10 LIGHT POLLUTION CODE

7.10.1 Purpose

The purpose of this Article is to achieve effective and efficient lighting, while preserving the safety, security and well-being of City residents and visitors; to protect and enhance the lawful nighttime use and enjoyment of all property through protection of access to the dark, night skies; and, to encourage the conservation of energy and other resources. To specify and encourage lighting practices and systems that will minimize the adverse man-made light pollution effects of sky-glow, glare and light trespass.

7.10.2 Definitions

- A. "Decorative" means lighting which is used for non-utilitarian purposes such as lighting building exteriors, fountains, landscaping, and decorations.
- B. "Fully shielded" means that fixtures are shielded in such a manner that light rays emitted by the fixture, either directly from the lamp or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted.
- C. "General Illumination" means outdoor lighting used for, but not limited to, illumination for walkways, roadways, equipment yards, parking lots, and outdoor security where safety or security of the grounds is the primary concern.
- D. "Glare" means the sensation produced by a bright light source within the visual field that is sufficiently brighter than the level to which the eyes are adjusted, causing discomfort and/or loss in visual performance or visibility.
- E. "Installed" means the attaching or assembling in place of any outdoor light fixture.
- F. "Light Fixture, Fully Shielded" means a light fixture constructed, installed and maintained in such a manner that all light emitted by the fixture, either directly from the lamp or indirectly by reflection or refraction from any part of the fixture, is projected below a horizontal plane running through the lowest part of the fixture. A practical way to determine if a fixture or tube is fully shielded: if the lamp or tube, any reflective surface, or lens cover (clear or prismatic) is visible when viewed from above or directly from the side, from any angle around the fixture or tube, the fixture or tube is not fully shielded.
- G. "Light Trespass" means stray electric light in excess of the levels specified in Section 7.10.8 falling where it is not desired or needed. Direct or reflected light that has its source on one site, and illuminates areas beyond the property boundaries. Light trespass is typically produced by stray light from unshielded or misdirected outdoor lighting, and includes glare from direct viewing, as well as "off-site spill" light.

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- H. "Lumen" means a unit used to measure the total amount of light that is produced by a luminaire. The conversion of watts to lumens is provided in Section 7.10.15.
- I. "Luminaire" means a light fixture, including the complete lighting assembly (including lamps, housings, reflectors, lenses and shields), but excluding the support assembly.
- J. "Off-Site Spill Light" means any combination of glare, uplight (sky glow) and/or light trespass applicable, but not limited to, structure exterior lighting, roadway/street lighting, pedestrian malls, parks, recreational facilities, outdoor display lots, parking lots, service stations, billboards and signage.
- K. "Outdoor Light Fixtures" means outdoor electric illuminating devices, outdoor fixtures, lamps and other devices; searchlights, spot lights, flood lights, permanently installed or portable, used for illumination, emergency, security or commercial purposes. Such devices shall include, but are not limited to, lights for: parking lots, roadways, buildings and structures, recreational areas and facilities, landscaping decorative effects, billboards and signs (advertising and other), product display areas.
- L. "Outdoor Recreational Facility" means an area designed for active recreation, whether publicly or privately owned, including but not limited to parks, baseball or softball diamonds, soccer and football fields, golf courses, tennis courts, and roping/equestrian arenas.
- M. "Partially shielded" means the fixtures are shielded in such a manner that the bottom edge of the shield is below the plane of the center line of the lamp reducing light above the horizontal.
- N. "Person" shall mean any private person, tenant, lessee, owner, or any commercial entity including but not limited to companies, partnerships, joint ventures or corporations.
- O. "Residential Lighting" means residential refers to outdoor lighting for single or multiple household dwellings.
- P. "Sky-glow" means the undesirable and unnecessary emission of light rays, directly or indirectly, into the night sky.
- Q. "Use, Non-Residential" means the use of land for a purpose other than residential dwelling units.
- R. "Watt" means the unit used to measure the electrical power consumption (not the light output) of a lamp.

7.10.3 New Uses, Buildings and Additions or Modifications

The requirements of this Code shall apply to any and all new uses and additions to existing land uses, developments, buildings, or structures.

- A. Change of Use. Whenever the use of any existing building, structure, or premises is changed to a new use, all outdoor lighting shall be reviewed and brought into compliance

- B. For purposes of this section, the following are considered to be major additions:
1. Additions or modifications of 50 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions subsequent to the effective date of this provision; or,
 2. Single or cumulative modification or replacement of outdoor legally installed lighting fixtures constituting 50 percent or more of the watts that would be permitted under this Code for the property, no matter the actual amount of lighting already on a non-conforming site.

- C. For purposes of this section, the following are considered to be minor additions:
1. Additions or modifications of less than 50 percent in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces to existing uses shall require the submission of a complete inventory and site plan detailing all existing and any proposed new or modified outdoor lighting. Any new or modified outdoor lighting on the site shall meet the requirements of this Code with regard to shielding and lamp type; the total amount of lighting after the modifications are complete shall not exceed that on the site before the modification, or that permitted by this Article, whichever is larger.

7.10.4 Permits

- A. Any person changing the use of an existing building, structure, or premises or making a major addition as defined in Section 7.10.3 shall apply for a permit with the City Building Inspector.
- B. Any person applying for a building or use permit under the City of Bisbee Code or the City of Bisbee Zoning Code intending to install outdoor light fixtures shall as a part of said application submit evidence to the City Building Inspector that the proposed work will comply with these provisions. The submission shall contain:
1. Plans indicating the location on the premises, and the type of all illuminating devices, existing and proposed.
 2. Description of the existing and proposed illuminating devices, fixtures, lamps, supports and other devices, and the initial lumen output. This description shall include but is not limited to, manufacturers' catalog cuts, photographs, diagrams and/or drawings.
- C. Substitution of outdoor light fixtures or lamps after a permit has been issued requires City Building Inspector approval prior to installation. Amendments to permits for the installation of outdoor light fixtures require adequate information to assure compliance with this Code, pursuant to Section 7.10.4(B).

7.10.5 Light Trespass

Requirements for height, shielding, placement and aiming of lights to minimize light trespass and direct glare emitted by a lighting system shall be, as follows:

- A. Off-site spill light on adjacent properties and roadways shall be minimized by complying with the following:
 - 1. Residential Sites: The overall height of lighting fixtures (including the base) shall not exceed 20 feet above ground level, except for residential sites with a minimum parcel size of 4 acres or larger. Lighting fixtures which are located 50 feet or more from any property line shall not exceed 30 feet in height (including the base) above ground level.
 - 2. Non-Residential Sites: Except as provided herein for specific uses, the overall height of lighting fixtures (including the base) on all non-residential sites shall not exceed 30 feet above ground level. The overall height of lighting fixtures located at least 100 feet from any property line shall not exceed 35 feet in height above ground level.
 - 3. Any lamp type with output of 1,000 lumens or more shall be fully shielded.
 - 4. All light fixtures located within 25 feet of the property line adjacent to a residential use shall use fully shielded luminaires.
 - 5. Final determination as to compliance with this section shall be based on point-by-point analysis by the City Building Inspector.
- B. Direct glare shall be minimized by compliance with the following requirements:
 - 1. The lighting system shall be designed to minimize the impact on sky glow and glare to adjacent properties.

7.10.6 Shielding of Outdoor Light Fixtures

- A. Total outdoor light output shall not exceed the limits in Section 7.10.8. (The values in this table are upper limits and not design goals; design goals should be the lowest levels that meet the requirements of the task to reduce glare and reduce energy costs.)
- B. Streetlight fixtures are exempt from this requirement if the shielding is not available from the manufacturer.

7.10.7 Special Use Permit and Waivers

Any application or lighting installation not meeting all requirements of this Code, including, but not limited to height, shielding, curfew or lumen caps shall require a Special Use Permit, and must demonstrate that the proposed lighting will not cause off-site glare or light trespass. The Special Use Permit application shall be accompanied by the lighting system design, and prior to final inspection or use, the installation shall be certified by the City Building Inspector.

7.10.8 Maximum Total Outdoor Light Output

Zoning	Total Shielded Lumens Per Acre*	Total Unshielded Lumens Per Acre
Non-Residential	150,000	3,000
Residential	20,000	10,000

*Properties under an acre are held to the per acre lumen cap.

7.10.9 Prohibitions

- A. The operation of searchlights and/or laser lights for advertising or commercial purposes is prohibited.
- B. No new mercury vapor outdoor light fixtures shall be installed after the effective date of this section, noting the use of mercury vapor light fixtures were prohibited in the State of Arizona after January 1, 2011.

7.10.10 Signage

- A. External illumination for signs shall conform to the shielding restrictions and lumen caps of Section 7.10.8. All upwardly-directed sign lighting is prohibited.
- B. All lighting mounted under the canopy, including but not limited to light fixtures mounted on or recessed into the lower surface of the canopy and any lighting within signage (but not including any lamps mounted within the pumps and used to illuminate information indicating the total cost of such items as fuel pumped and price per gallon), shall be included in the Total Outdoor Light Output for the site and is subject to the shielding restrictions and lumen caps of Section 7.10.8.

7.10.11 Nonconforming Light Fixtures

- A. All outdoor electric illuminating devices shall be installed in conformance with the provisions of this Code, the City of Bisbee Zoning Code, and any applicable building codes.
- B. Where any provision of any of the Arizona Revised Statutes, or any Federal Law, or any related City of Bisbee regulation conflicts with the requirements of this Light Pollution Code, the most restrictive shall govern.

7.10.12 Permanent Exemptions

- A. Light fixtures using fossil fuel (i.e., light produced directly or indirectly by the combustion of natural gas or other utility type fossil fuels) are exempt from the requirements of this ordinance.
- B. Equipment and signal lights necessary for agricultural equipment or required by state or federal regulations shall be by the least obtrusive means that meets the applicable operating or regulatory requirements.

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- C. Outdoor lighting on facilities and lands owned and operated or protected by the United States Government, the State of Arizona, its political subdivisions—~~including, but not exclusive to, Cochise County, the Bisbee Unified School District and the City of Bisbee—~~are exempt by law from all requirements of this section. Voluntary compliance with the intent of this ordinance at those facilities is encouraged.
- D. Temporary lighting to facilitate immediately necessary repairs or similar emergency actions of a public or private utility company necessary to continue or resume service, provided the emergency does not exceed 48 hours without authorization from the Zoning Inspector. Lights shall be arranged to reflect light away from and prevent glare to adjoining residential properties and public rights of way to the extent feasible.
- E. Temporary lighting to facilitate immediately necessary repairs or similar emergency actions provided the emergency does not exceed 48 hours without authorization from the Zoning Inspector. Lights shall be arranged to reflect light away from and prevent glare to adjoining residential properties and public rights of way to the extent feasible.
- F. Temporary lighting to facilitate harvesting or similar actions necessary for general agricultural use (as defined in the Zoning Regulations) provided the night time operation does not exceed 5 days without authorization from the Zoning Inspector. Lights shall be arranged to reflect light away from and prevent glare to adjoining residential properties and public rights of way to the extent feasible.
- G. The illumination of outdoor recreational facilities, public or private. Voluntary compliance with the intent of this ordinance at those facilities is encouraged.
- H. Lighting required to display an American Flag.
- I. Seasonal decorations that exceed the lumen cap of Section 7.10.8 shall be permitted from October 15 to January 15.

7.10.13 Temporary Exemptions

- A. Any person as defined herein may submit a written request on a form prepared by the Board of Adjustment and the City Building Inspector for a “temporary exemption” to the requirements of this Code, such exemption to be valid for thirty (30) days, renewable at the discretion of the City Building Inspector. The request for Temporary Exemption shall contain at least the:
 - 1. Specific exemptions requested.
 - 2. Specific reasons why the requirements listed in this Code cannot be met.
 - 3. Type and use of exterior light involved.
 - 4. Duration of time for requested exemption.
 - 5. Type and number of lamps and calculated lumens.

- 6. Total lumens of lamp or lamps.
- 7. Proposed location and height of exterior lights.
- 8. Previous temporary exemptions, if any.
- 9. Physical size of exterior light and type of shielding provided.

B. The City Building Inspector, within fifteen (15) days from the date of the properly completed Request for Temporary Exemption, shall approve or reject the Request in writing. If rejected, the person making the Request shall have the right of appeal to the Board of Adjustment as any other appeal of the City Building Inspector's decisions.

7.10.14 Violations and enforcement

- A. Non-compliant lighting that was installed in good faith by an electric utility shall be brought into conformance with this Code within five (5) years of adoption; however, person light fixtures which are the subject of a citizen complaint or City enforcement action shall be brought into conformance within thirty (30) days of notification of the property owner.
- B. It shall be unlawful to install or operate an outdoor light fixture in violation of this Code. Failure to comply with this Code and remedy any and all violations within the time allotted in Section 7.10.14(A) shall be subject to a fine of not less than \$100.00 and not more than \$1000.00. Each and every day which the illegal erection, maintenance, and use continue is a separate offense.
- C. The fees in this Section 7.10.14 shall be superseded by a subsequent act of the City Council to adopt a new fee schedule. Until and in the event these fees are superseded, this Section 7.10.14 controls.

7.10.15 Lamp Data

Incandescent	Lamp Wattage	Initial Lumens
	25	150
	40	460
	60	890
	75	1210
	100	1750
	150	2880
	300	6360

Aluminized Floods & Spots	Lamp Wattage	Initial Lumens
	1,000	23,800

Compact Fluorescent/Pressure Sodium	Lamp Wattage	Initial Lumens
	5	250
	7	400
	13	900
	18	1,200
	26	1,800
	32	2,900

Tungsten-Halogen Sodium	Lamp Wattage	Initial Lumens
	250	4,700
	500	10,700
	1,000	19,000
	1,500	36,000

Mercury Vapor	Lamp Wattage	Initial Lumens
	100	4,000
	175	8,500
	400	23,000
	700	44,000
	1,000	61,000

Fluorescent (Standard Cool-White, 1.5 Inch Tubes)	Lamp Wattage	Initial Lumens
	21	1,190
	30	2,050
	36	2,450

Metal Halide	Lamp Wattage	Initial Lumens
	175	14,000
	250	20,000
	400	40,000
	1,000	115,000

PAR (Parabolic Aluminized Floods & Spots)	Lamp Wattage	Initial Lumens
	150	1,740

HPS (High Pressure Sodium)	Lamp Wattage	Initial Lumens
	50	3,300
	70	5,800

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	100	9,500
	150	16,000
	200	22,000
	250	30,000
	310	37,000
	400	50,000
	1,000	140,000

LPS (Low Pressure Sodium)	Lamp Wattage	Initial Lumens
	18	1,800
	35	4,800
	55	8,000
	90	13,500
	135	22,500
	180	33,000

These are standard values are based on manufacturers data and are to be used unless the applicant submits other verified lumen values.