

DEVELOPMENT CODE

ARTICLE 151.11 OUTDOOR LIGHT CONTROL

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Section 151.11.001

Purpose

It is the intention of this Article to encourage good lighting practices that are designed to conserve energy, improve nighttime safety, and enhance security. The intent of this Article is also to specify and encourage lighting practices and systems that will minimize the adverse light pollution effects of sky-glow, glare and light trespass.

Section 151.11.002

Conformance with Applicable Codes

- A. All outdoor lighting fixtures shall be installed in conformance with the provisions of this Article and any other building code requirements, as applicable.
- B. Where any provisions of any of the Arizona Revised Statutes, any federal law, or any companion ordinance conflict with the requirements of this Outdoor Light Control Article, the most restrictive provision shall govern.
- C. All new development and those portions of any addition to an existing commercial, industrial, or multi-family development requiring a commercial site plan review and requiring outdoor lighting shall meet the requirements of this Article.
- D. All outdoor light fixtures, existing and fully installed, or for which a building permit has been issued prior to the effective date of this Article, shall be considered legal non-conforming (see Article 151.24). No modification or replacement shall be made to a nonconforming fixture unless the fixture thereafter conforms to the provisions of this Article, except that lamp and related apparatus (lens,

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ballast, etc.) replacement is allowed. Abandoned site lighting fixtures shall be regulated according to the provisions of Article 151.24.

- E. Legal, non-conforming lighting fixtures may continue to be used provided such fixtures are turned off between the hours of 10:00 p.m. (or when the business activities cease, whichever is later) and sunrise. This requirement does not apply to fixtures used for safety or security purposes. Non-conforming lights that are improperly aimed and, as a result, are considered a detriment to public health, safety, and welfare shall be regulated under the City's public nuisances and property maintenance codes.
- F. A reduction of non-conforming lighting fixtures is required on an existing developed commercial site where a site plan or modified site plan review is required for new development. This reduction shall be as determined by the City. Possible means for this reduction are as follows:
 - 1. Appropriate fixture aiming to reduce light trespass;
 - 2. Tilting any existing fixtures to a horizontal position to maximize available shielding;
 - 3. Adding shielding to fixtures when possible;
 - 4. Utilizing motion sensors or automatic shutoff devices to eliminate unnecessary use of energy resources.
- G. Conforming lighting fixtures shall be turned off between the hours of 10:00 p.m. (or when the business activities cease, whichever is later) and sunrise. This requirement does not apply to fixtures used for safety or security purposes. (Sign lighting cannot be used for security lighting purposes.)

Section 151.11.003

Applicability to New Development

- A. For commercial and industrial site plan approval, sufficient information to verify compliance with this Article shall be submitted. Submitted information shall include the following:
 - 1. Plan indicating the location and height of all exterior pole-mounted and wall-mounted light fixtures.
 - 2. Lighting fixture cutsheets that are legible and clearly indicate all applicable elements of the proposed fixture.

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3. Luminaire schedule specifying the per-acre lumen count for the site (see Table 151.11-1 for lumen cap limits) and specifying the uniformity ratio (see Section 151.11.008). The luminaire schedule shall also indicate the lumen levels (see Section 151.11.004.E, Total Light Output).
4. If the required lighting information is not sufficient to determine compliance with this article, additional information may be required, including a photometric analysis or other evidence prepared by a certified illumination engineer.

Section 151.11.004

General Requirements

- A. Shielding. All exterior light fixtures, shall be fully shielded and maintained in a manner that retains the fully shielded characteristics. Building interior lighting that causes outdoor glare shall be screened in a manner that eliminates glare that is visible from a public roadway. Light trespass and glare onto adjoining properties shall be minimized.
- B. Adjacent Residential Zone Shielding Requirement. Lighting shall be oriented to direct light away from adjoining residential zone districts. Where standard light shielding is insufficient to protect adjoining residential properties from light trespass, additional house-side shielding may be required, as determined during the site plan review.
- C. Height.
 1. The maximum overall height of lighting fixtures, including the base, shall not exceed the height allowed in the applicable zone district (including reductions in height mandated by proximity to adjoining residential zones, if applicable).
 2. Light fixtures in a Multi-Family Residential zone district shall not exceed 30 feet.
 3. Wall-mounted lighting fixtures shall not be located above the roofline and shall not exceed the applicable zone district height.
- D. Minimum Lighting Requirements
 1. Driveway Entrances. See Article 151.08.010.
 2. Multi-family residential, commercial, and industrial development shall maintain safely lit parking lots, and walkways to units and other buildings, and shall maintain landscaping to ensure such safety over time.

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3. Commercial and industrial development where parking lot islands are required shall ensure during design and construction that required landscaping will not interfere with required light fixtures over time.

E. Total Outdoor Light Output.

1. Total outdoor light output shall not exceed the limits in Table 151.11-1 (with the exception of "E" below).
2. Lighting Areas.
 - a. Area 1 consists of all commercial and industrial zoned properties and multi-family development requiring a commercial site plan review, and is adjacent to any residential zone district or use.
 - b. Area 2 consists of all other commercial and industrial zoned properties and multi-family development requiring a commercial site plan review.

**Table 151.11-1
Lumen Cap Limits Per Developed Acre***

	Light Fixtures Using All Low-Pressure Sodium**	Light Fixtures Using Other Light Types
Area 1	200,000 Lumens***	150,000 Lumens***
Area 2	250,000 Lumens***	200,000 Lumens***

* Developed acre consists of all improved surface area including buildings, structures, storage and service areas, parking, loading, driveway areas, required setback areas and required landscaping related to the use, but not areas that are only cleared.

** Low Pressure Sodium lamps are the preferred lamp type.

F. Service Station Canopy Lighting.

1. Light fixtures mounted under canopies shall be recessed or fully shielded.
2. Under-canopy lighting shall be limited to 60 lumens per square foot of canopy area and shall not count toward the lumen cap levels shown in Section 151.11.004D.

G. Light Emitting Diode (LED) Lighting

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1. LED lights used in private development shall conform to the lighting requirements in this Code and shall be filtered to have a Correlated Color Temperature (CCT) maximum of 3,000K.
2. LED lights used on public roadways shall conform to the requirements of Development Code Article 151.09.010 and shall be filtered to have a Correlated Color Temperature (CCT) maximum of 3,000K.

Section 151.11.005

Residential Lighting

- A. Residential lighting that directly shines onto neighboring properties shall be prohibited. Permanently used lighting fixtures associated with residential uses shall be fully shielded. Unshielded lights, whose glare is mitigated by features such as porches, overhangs, walls, or temporary usage, may be considered compliant provided such lighting minimizes light trespass onto neighboring properties. Use of motion sensors is encouraged.
- B. Residential uses, when consisting of five or more residential units on a single lot, shall meet the commercial zone district lighting standards.

Section 151.11.006

Prohibitions

- A. Recreational Facilities. Existing outdoor recreational facilities, public or private, with non-conforming illumination, shall not be illuminated after 11:00 p.m., except to conclude a specific recreational or sporting event, or any other activity that was in progress prior to 11:00 p.m. All new recreational facilities shall meet the shielding standards in Section 151.11.004.A.
- B. Mercury Vapor. No replacement equipment other than bulbs for mercury vapor lighting fixtures shall be sold in the state after January 1, 1991, and the use of mercury vapor light fixtures is prohibited after January 1, 2011, (A.R.S. 49-1104). No new mercury vapor outdoor light fixtures shall be installed after the effective date of this Article.
- C. Searchlights, Laser Lights. The operation of searchlights and/or laser lights for advertising or commercial purposes is prohibited (except as allowed under 151.11.010 Exemptions).
- D. All upward-directed lighting is prohibited, except as allowed under 151.11.010.

Section 151.11.007

Signage

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Other Illuminated Panels. Other internally-illuminated panels or decorations not considered to be signage according to Code, such as illuminated canopy margins or building faces shall be subject to the standards applicable for such lighting including, but not limited to, the shielding standards in Section 151.11.004 and lumen cap limits in Table 151.11-1.

Section 151.11.008

Outdoor Parking Lots

- A. Outdoor parking lots used during hours of darkness shall be lighted.
- B. The roof level of a multi-level parking facility is considered an outdoor parking lot.
- C. The lighting design shall provide for uniform light (no dark areas or pockets) and be sufficient for safety and identification of features. A uniformity ratio of not more than 4 to 1 (average to minimum) shall be provided.

Section 151.11.009

Security Lighting

- A. Security lighting is the minimum lighting necessary to reduce the negative impacts of crime as determined by a business owner but shall not exceed 50 percent of the normal site lighting.
- B. Sensor technologies, timers, or other means to activate additional lighting during times when it will be needed are encouraged. Such lighting shall be the minimum necessary and shall generally be utilized only for short duration.

Section 151.11.010

Exemptions

- A. Fossil Fuel Light. Light produced directly or indirectly by the combustion of natural gas or other utility-type fossil fuels.
- B. Seasonal decorations using typical unshielded low-wattage type lamps.
- C. Low voltage landscape lights not exceeding 20 watts per fixture, provided they are fully shielded and aimed away from public roadways.
- D. Self-contained solar lights not exceeding 600 lumens per fixtures.

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- E. A flagpole illuminated with an upward-directed light provided the lumen count does not exceed 4,000 and off-site glare and light trespass are eliminated by shielding.
- F. Decorative neon used solely for architectural embellishment.
- G. Floodlight Fixtures. Incandescent or parabolic aluminized reflector (PAR) floodlights, or similar fixtures, which are shielded and properly aimed (no more than 45 degrees, or half way between straight down and horizontal), not to exceed 2,000 lumens and used for short time periods only, shall be exempt from lumen caps. Such fixtures shall be controlled by timers or motion sensors, and shall not remain on over 10 minutes after the area has been vacated.
- H. Building Accent Lighting. Lighting intended for the architectural illumination of buildings shall be allowed and shall not count toward lumen caps. Such lighting shall be fully shielded and aimed only at building walls with no spillover to the sides or top of a building wall. Such lighting shall also be turned off between the hours of 11:00 p.m. (or when the business closes, whichever is later) and sunrise.
- I. Temporary Exemptions. Any individual may submit a written request for a temporary exemption to the requirements of this Article. Exemptions may be granted for periods up to seven calendar days. The request shall include the specific exemption requested, the need for the exemption, the type and use of exterior light involved, and any other information that shall enable the City to evaluate the need for the exemption and any conditions that shall be attached to the approval.

Section 151.11.011

Special Use Permit for Waivers

- A. 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.
- B. The Special Use Permit application shall be accompanied by the lighting system design and shall be certified by an Arizona Registered Professional or other certified lighting specialist. Certification is to verify that the minimum illuminance level for the specific activity has been achieved, as recommended by the Illuminating Engineering Society of North America (IESNA), and that all other applicable provisions of this Article have been met.
- C. The process for a Special Use Permit requires the Permit to be reviewed by the Commission and the Commission's recommendation forwarded to the Council for consideration. The meeting notifications are provided to the community through a published notice and posting on the property 15 days before the hearing. Any appeals of the Council decision will go to the Hearing Officer under the provisions of Article 151.30, Appeals and Variances.