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## Sec. 38-408. Lighting and glare standards.

- (a) *Purpose and intent.* The purpose of this section is to regulate outdoor lighting in order to reduce or prevent light pollution in the city. New lighting technologies have produced lights that are extremely powerful, and these types of lights may be improperly installed so that they create problems of excessive glare, light trespass, and higher energy use. Light trespass reduces privacy, degrades the enjoyment of the night sky, and results in higher energy use and increased costs for everyone. Appropriately regulated, and properly installed, outdoor lighting will contribute to the safety and welfare of the residents, and will help preserve the historic and rural character of the city. It is further the intent of this section to protect the quality of La Vernia's night sky, to reduce light pollution caused by excessive, misdirected or unnecessary outdoor illumination, to conserve energy, and to position the city to pursue recognition as an international Dark Sky Community pursuant to the standards of the International Dark-Sky Association (IDA)
- (b) *Applicability.*
- (1) All outdoor lighting fixtures installed on private and public property within a new development or redevelopment within the city limits shall be required to comply with this section. This section does not apply to interior lighting; however, overly bright light emitted from a structure will be subject to this section if it is determined by the administrative official that it creates a nuisance or a potential safety hazard.
  - (2) All outdoor lighting fixtures existing and legally installed and operating before the effective date of the ordinance from which this chapter is derived shall be exempt from this section unless they are determined to create a safety hazard. When existing lighting fixtures become inoperable, their replacements are subject to the provisions of this section.
  - (3) Modifications to nonconforming lighting fixtures shall also comply with this section.
  - (4) In the event of a conflict between this section and any other section of this chapter or any other regulation of the city, the more stringent requirements shall apply.
- (c) *Exemptions.* The following are exempt from the provisions of this section:
- (1) Publicly maintained traffic control devices.
  - (2) Streetlights installed prior to the effective date of the ordinance from which this chapter is derived.
  - (3) Temporary emergency lighting (fire, police, repair crews).
  - (4) Lighting fixtures and illumination requirements imposed by the state department of transportation within state department of transportation right-of-way.
  - (5) Moving vehicle lights.
  - (6) Navigation lights (aircraft warning beacons on water towers and wireless transmission facilities) required by state or federal law.
  - (7) Signs and associated lighting that conform to the city's sign regulations. Subject to the sign illumination standards set fourth in subsection (g) of this section.
  - (8) Seasonal decorations with lights in place no longer than 60 days.
  - (9) Sports field lighting, subject to the sports lighting standards set forth in subsection (f)(4) of this section.
  - (10) Other temporary uses approved by the city council (festivals, carnivals, fairs, nighttime construction).
  - (11) Covered porch lighting on residences provided that each external light fixture does not exceed 150 watts (2,220 lumens).

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- (12) Security lights of any output that are controlled by a motion sensor switch provided they do not exceed 0.25 footcandle at the property line and do not remain illuminated for a duration not to exceed ten to 12 minutes after activation.
- (d) *Submittals.* Applications for all building permits for new construction or redevelopment, including the installation of outdoor lighting fixtures, shall provide proof of compliance with this section. The following information shall be submitted as part of the site plan:
- (1) Plans indicating the location, type, and height of lighting fixtures including both building-mounted and ground-mounted fixtures;
  - (2) A description of the lighting fixtures, including lamps, poles or other supports and shielding devices, which may be provided as catalog illustrations from the manufacturer;
  - (3) Photometric data, which may be furnished by the manufacturer, showing the angle of light emission;
  - (4) Detailed site lighting plan illustrating the footcandle power measured throughout the site; ~~and~~
  - (5) The correlated color temperature (CCT) rating, in Kelvins, for each proposed fixture; the total initial lumen output per fixture; and the calculated lumens per net acre for the illuminated area of the property; and
  - (56) Additional information as may be required by the administrative official in order to determine compliance with this section.
- (e) *General standards.* The following standards shall apply to all outdoor lighting installed after the effective date of the ordinance from which this chapter is derived:
- (1) Outdoor lighting shall be designed to provide the minimum lighting necessary to ensure adequate safety, night vision, and comfort, and not create or cause excessive glare onto adjacent properties and public street rights-of-way.
  - (2) Outdoor lighting must be hooded, shielded, and/or aimed downward.
  - (3) The hood or shield must mask the direct horizontal surface of the light source. The light must be aimed so as to ensure that the illumination is only pointing downward onto the ground surface.
  - (4) Any bright light shining onto an adjacent property or streets that would result in a safety hazard is not permitted. Light trespass beyond property boundaries or above the horizontal plane shall be considered noncompliant.
  - (5) Existing fixtures may be adapted to comply with this section by adding a properly designed hood or shield, or by redirecting any upward mounted fixture downward onto the ground surface, sign, or illuminated structure.
  - (6) All outdoor lighting fixtures shall be designed, located, and maintained to minimize light trespass and all direct illumination shall be kept within the boundaries of the property upon which the light fixture is positioned.
  - (7) When approved, accent lighting shall be directed downward onto the structure or object and not toward the sky or adjacent properties. Direct light emissions shall not be visible above the roofline or beyond the building edge.
  - (8) Spotlights on landscaping and foliage shall be limited to 150 watts output. The light shall be shielded and so as not to create a nuisance or safety hazard.
  - (9) correlated color temperture (cct). The following CCT limits shall apply to all outdoor luminaries subject to this section:

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a. streetlights and area lights located within or adjacent to public rights-of-way shall not exceed 2,700 Kelvins (k)

b. all other outdoor luminaries shall not exceed 3,000 Kelvins, except that luminaries directed downward on a fuel pump canopy or luminaires specifically approved through the International Dark Sky.

c. Luminaires rated below 2,500 Kelvins are encouraged to achieve optimal preservation of night sky quality and minimize disruption to wildlife.

(10) total outdoor light output limits. The lumen per net acre values below are upper limits and not design goals; fixtures shall be designed to provide the lowest light level that meets the functional requirement of the use.

a. Nonresidential property: total outdoor light output installed on any nonresidential property shall not exceed 100,000 lumens per net acre in any contiguous illuminated area.

b. Residential property: Total outdoor light output installed on any residential property shall not exceed 25,000 lumens per net acre in any contiguous illuminated area.

c. Undeveloped, nonilluminated portions on a property shall not be included in the net acreage calculation. Streetlights owned and maintained by the city or a governmental entity that illuminate public rights-of-way are excluded from the lumen per net acre calculation.

(f) *Specific nonresidential lighting requirements.*

(1) The maximum allowable intensity of lighting for any nonresidential use shall be 0.25 footcandles measured at the property line adjacent to any residentially zoned area or at the street right-of-way line when the residentially zoned area is separated by a public street right-of-way.

(2) Light poles shall be placed on the site at a setback equal to their height from all adjacent residential property or street rights-of-way.

(3) Light poles shall have a maximum height equal to the maximum height allowed for the main building in each zoning district or shall be equal in height to the tallest building located on the property in which the light is placed, whichever is less.

(4) Sports field and outdoor recreational facility lighting. Notwithstanding the exemption in subsection (c)(9) lighting at public and private outdoor sports facilities, including but not limited to playing fields, tracks, tennis courts, and aquatic facilities, shall comply with the following requirements:

a. Fixtures shall be shielded to the greatest practical extent to reduce glare, light trespass, and sky glow beyond the facility boundaries.

b. Illumination levels shall not exceed nationally recognized Illuminating Engineering Society of North America (IESNA) standards for the applicable class of play.

c. Sports field lighting shall be extinguished no later than 11:00 p.m. or within one (1) hour of the end of active play or a scheduled event, whichever is later. All sports field lighting shall be fitted with mechanical or electronic timers to prevent lights from remaining on after the applicable curfew.

d. Lighting shall be provided exclusively for illumination of the playing surface and adjacent spectator areas. Parking lots adjacent to sports facilities shall be illuminated only by separate fixtures that comply with all applicable standards of this section.

(5) Lighting curfew — nonresidential uses. All exterior lighting on nonresidential properties shall comply with the following curfew requirements:

a. All privately owned exterior lighting not equipped with adaptive controls shall be extinguished by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever is later.

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b. Exterior lighting equipped with adaptive controls (timers, dimmers, or motion-sensing switches) shall reduce total outdoor light output to twenty-five percent (25%) or less of maximum permitted output by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever is later. Adaptive controls may activate lights to resume normal permitted output upon detection of motion on the property, provided that output is reduced back to twenty-five percent (25%) or less within five (5) minutes after motion ceases. Adaptive controls shall not be triggered by activity occurring off the property.

c. Businesses operating on a twenty-four (24) hour basis are exempt from the curfew requirements of this subsection.

d. All new publicly owned outdoor lighting fixtures, including streetlights, shall incorporate adaptive controls to actively regulate light output such that illumination of areas is restricted to times, places, and amounts required for safe occupancy.

(g) Sign illumination standards.

The following standards apply to all illuminated signs within the city limits, notwithstanding any exemption provided in subsection (c)(7). These standards supplement, and do not replace, any sign regulations applicable under Chapter 26 of this Code. In the event of a conflict, the more stringent standard shall apply.

(1) General. All permanent illuminated signs shall be extinguished by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever is later. All sign illumination shall comply with the CCT requirements of subsection (e)(9) of this section.

(2) Externally illuminated signs. Signs illuminated by external light sources shall be lit only from above the sign face, with fully shielded luminaires designed to prevent light from spilling beyond the physical edges of the sign.

(3) Internally illuminated signs. Internally illuminated freestanding and building-mounted signs shall comply with the following:

a. Signs shall be constructed with an opaque or dark-colored background with translucent letters and symbols, such that the illuminated area is the letters or graphic rather than the sign face as a whole.

b. Internal illumination between sunset and sunrise shall be the lowest intensity needed to allow the sign to be visible and shall not exceed 100 nits.

(4) Electronic message center (EMC) displays. EMC displays shall comply with the following:

a. EMC displays are prohibited within or immediately adjacent to residential zoning districts, parks, natural areas, and the Old Town Overlay District.

b. Messages shall display for no less than thirty (30) seconds. Transitions between messages shall not exceed 0.25 seconds. Moving, scrolling, or flashing text and images are prohibited.

c. EMC nighttime luminance (within one hour after sunset) shall not exceed forty (40) candelas per square meter in commercial areas and twenty (20) candelas per square meter in rural and low-density residential areas.

d. On-premises EMC displays shall be switched off completely by 11:00 p.m. or within thirty (30) minutes of the close of business, whichever is later, and shall remain off until one hour before sunrise. EMC displays used exclusively for traffic and public safety information are exempt from this curfew.

(h) Nonconforming outdoor lighting — compliance timeline.

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Existing outdoor lighting lawfully installed before the effective date of this amendment that does not conform to the standards added by this amendment shall be considered nonconforming. Nonconforming outdoor lighting is subject to the following compliance requirements:

(1) Universal deadline. All nonconforming outdoor lighting shall be brought into compliance with this section within X years of the effective date of this amendment.

(2) Permit-triggered compliance. The following permit or approval actions shall require the subject property's existing outdoor lighting to be brought into compliance with this section prior to final inspection, issuance of a certificate of occupancy, or the effective date of the permit or approval, as applicable:

a. Rezoning, specific use permit, or conditional use permit application;

b. Application for a building permit for new construction, a major addition, or a substantial improvement;

c. Site development permit or sign permit for an externally or internally illuminated sign; and

d. Initial issuance of a food establishment permit or alcoholic beverage permit.

(3) For permit-triggered compliance, the applicant shall have a maximum of ninety (90) days from the date of permit issuance to bring the affected lighting into conformance, provided such time frame does not exceed the five-year universal deadline.

(i) Enforcement and penalties.

Violations of this section shall be subject to the enforcement and penalty provisions of Article V of this chapter (Sections 38-501 through 38-503). The administrative official is authorized to issue a written notice of noncompliance to the owner of any outdoor lighting fixture determined to be in violation of this section. Upon receipt of such notice, the owner shall have thirty (30) days to submit a corrective lighting plan for review and approval by the administrative official.

Any violation of this section that results in light trespass onto adjacent property or an unreasonable interference with the common use of any property is hereby declared a public nuisance subject to abatement under applicable state law and city ordinance.

(Ord. No. 120910-01, § 1(ch. 5, § 8), 12-9-2010)