

ARTICLE X. OUTDOOR LIGHTING

Sec. 26-275. Purpose and scope.

- (a) The purpose of this article is:
- (1) To reduce glare and improve nighttime visibility which contributes to safer, more secure, and attractive outdoor living spaces;
 - (2) To encourage efficient, controlled lighting that conserves energy;
 - (3) To make the community a better place to live and work and a more inviting place for tourists to visit;
 - (4) To protect properties from light trespass;
 - (5) To restore and preserve the city's heritage of a clear, dark night sky;
 - (6) To position the city to apply for the designation of International Dark Sky Community;
 - (7) To have lights at night that are directed where light is wanted, are a warm color, and equal the appropriate amount of light;
 - (8) To prevent light at night from being wasted offsite, off property, or into the night sky.
- (b) The scope of this article is as follows:
- (1) This article shall apply within the city limits, hereinafter referred to as "city".
 - (2) Nothing herein shall be construed as preventing or limiting the city from applying this article within the surrounding areas where the city asserts powers of extraterritorial jurisdiction (ETJ) through agreements with property owners or where authorized by state law.

(Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-276. Definitions.

Adaptive controls mean mechanical or electronic devices, when used in the context of outdoor lighting systems, intended to actively regulate the switching, duration, and/or intensity of light emitted by the outdoor lighting system. Examples of adaptive controls include timers, dimmers, and motion-sensing switches.

Beam of a light fixture means the spatial distribution of the emitted light.

City manager means the city manager or designee.

Correlated Color Temperature ("CCT") means a measure of the color properties of light emitted by lamps, being equal to the temperature, expressed in Kelvins (K). CCT values are typically provided on lighting manufacturer packaging or data sheets.

Decorative holiday lighting means low-intensity string lights, whose luminous output does not exceed 50 lumens per linear foot, and fully-shielded floodlights, whose luminous output does not exceed 1,000 lumens and which are aimed and oriented in such a way as to not create light trespass onto another property nor into the night sky.

Electronic display means any illuminated sign of an informative or advertising nature, whether on- or off-premise, and operable at night, whose content is made visible to the viewer by means of luminous elements under active electronic control and therefore subject to alteration in order to vary the content of the message. Electronic displays may be either static or dynamic in terms of light color and intensity.

Existing light fixtures means those outdoor light fixtures already installed at the time this article is adopted.

Floodlight means a light fixture having a wide beam.

Fully shielded means an outdoor luminaire constructed so that in its installed position, all of the light emitted from the light fixture is projected below the horizontal plane passing through the lowest light-emitting part of the fixture.

Glare means visual discomfort or impairment caused by a bright source of light in a direction near one's line of sight.

Greenhouse means any building that is constructed of glass, plastic, or other transparent material in which plants are grown under climate-controlled conditions and includes hoop houses and other similar structures.

Illuminance means the intensity of light in a specified direction measured at a specific point.

Light source means a light emitting portion of the luminaire and any diffusing elements and surfaces intended to reflect or refract light emitted from the lamp individually or collectively, for example, a lamp, bulb, lens, highly reflective surface, or frosted glass.

Light pollution means the unintended, adverse and /or obtrusive effect of the use of outdoor light at night.

Light trespass means light emitted from fixtures designed or installed in a manner that unreasonably causes light to fall on a property other than the one where the light is installed, in a motor vehicle drivers' eyes, or upwards toward the sky. If the light appears star-like from another property or the public roadway, the light is creating light trespass. It is expected that the illumination produced by a light source may be viewed from other properties but the light source itself should not be visible from other properties. Exhibit A of section 26-281 is a sample educational illustration about light trespass.

Lumen means the unit of measurement used to quantify the amount of light produced by a bulb or emitted from a light source. Lumen values are typically provided on lighting manufacturer packaging or data sheets. For the purposes of this article, unless otherwise stated, the lumen output values shall be the initial lumen output ratings as defined by the manufacturer, multiplied by the lamp efficiency. Lamp efficiency of 95 percent shall be used for all solid-state lamps and 80 percent for all other lamps, unless an alternate efficiency rating is supplied by the manufacturer.

Lumens per net acre means the total outdoor light output, as defined in this article, divided by the number of acres, or part of an acre with outdoor illumination. Undeveloped, non-illuminated portions of the property may not be included in the net acreage calculation.

Luminaire means a complete lighting assembly or lighting fixture, consisting of a lamp, housing, optic(s), and other structural elements, but not including any mounting pole or surface.

Luminance is a measure of light emitted by or from a surface.

Nit is the standard unit of measure of luminance used for internally illuminated signs, digital signs, or electronic displays.

Outdoor lighting means temporary or permanent lighting that is installed, located, or used in such a manner to cause light rays to shine outdoors. Nonresidential fixtures that are installed indoors that cause light rays to shine outside are considered outdoor lighting for the intent of this article. See Exhibit B of section 26-281 for an illustration of this type of situation. Residential fixtures installed indoors generating more than 3,800 lumens, approximately equal to a 300-watt incandescent bulb, that cause light to shine outside are also considered

outdoor lighting for the intent of this article. All of the lighting that illuminates the translucent portion of a greenhouse or solarium, including roofing material, is considered outdoor lighting for the intent of this article.

Private lighting means outdoor light fixtures that are owned, leased, operated, maintained, or controlled by individual persons, including families, partnerships, corporations, and other entities engaged in the conduct of business or other non-governmental activities.

Public lighting means outdoor light fixtures that are owned, leased, operated, maintained, or controlled by the city or other governmental entity. The light fixtures are normally located on, but are not limited to, streets, highways, alleys, easements, parking lots, parks, playing fields, schools, institutions of higher learning, and meeting places.

Sag-lens or drop-lens fixture means a fixture, typically seen on older streetlights or parking lot lights, where the lens extends below the lowest opaque part of the fixture such that light is scattered above the horizontal plane.

Searchlight means a light fixture having a narrow beam intended to be seen in the sky.

Spotlight means a light fixture having a narrow beam.

Temporary lighting means non-permanent lighting installations installed and operated for a duration not to exceed 30 days.

Total outdoor light output means the total amount of light, measured in lumens, from all outdoor light fixtures within the illuminated area of a property. The lumen value to be used in the calculation is the lumen value as defined in this article. To compute the total, add the lumen outputs attributed to each light fixture together.

(Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-277. Nonconforming existing outdoor light fixtures.

- (a) All existing outdoor lighting legally installed before the adoption of this article that does not conform with the standards specified by this article is considered nonconforming.
- (b) Nonconforming outdoor lighting is allowed to remain until required to be replaced pursuant to the terms of this article.
- (c) Nonconforming outdoor lighting shall be brought into compliance with this article within ten years from the date of adoption of this article.
- (d) If more than 50 percent of the total appraised value of a structure, as determined from the records of the county's appraisal district, has been destroyed, the nonconforming status expires and the structure's previously nonconforming outdoor lighting shall be removed and shall only be replaced in conformity with the standards of this article.
- (e) Nonconforming outdoor lighting shall be brought into conformance with this article as follows:
 - (1) *Nonresidential application.* All existing outdoor lighting located on a property used for nonresidential purposes that is part of an application for a conditional use permit or a building permit for a major addition is required to be brought into conformance with this article before final inspection or the issuance of a certificate of occupancy, when applicable. For the following permits issued by the city, the applicant shall have a maximum of 90 days from date of permit issuance to bring the lighting into conformance: sign permit for an externally or internally illuminated outdoor sign.
 - (2) *Residential addition or remodel.* Nothing herein shall be construed to terminate a residential property's nonconforming status as a result of an addition or remodel. However, all outdoor residential lighting

that is affixed to a construction project requiring a building permit is required to conform the standards established by this article.

- (3) *Abandonment of nonconforming.* A nonconforming structure will be deemed abandoned if the structure remains vacant for a continuous period of six months. In that instance, the nonconforming status expires and the structure's previously nonconforming outdoor lighting must be removed and may only be replaced in conformity with the standards of this article. Abandonment of the nonconformity will not occur during the vacancy of the structure while the structure is actively marketed for sale or lease.
- (f) It is unlawful to expand or repair outdoor lighting that was previously nonconforming or replace such lighting with nonconforming lighting where the prior nonconforming status has expired, been forfeited, or otherwise abandoned.
- (g) All new construction and/or new luminaires installed, including replacements for existing fixtures, shall comply with this article.
- (h) Residential property owners may request from the city an amortization extension of up to a maximum of ten years from the date a nonconforming fixture was installed provided that the fixture was compliant with existing city regulations at the time it was installed, and that date of installation can be substantiated via documents, date stamped photographs, or similar evidence, which is then approved by the city manager.
- (i) Amortization extensions to a date at which outdoor lighting shall conform to this article shall be on a per fixture basis with the following requirements:
 - (1) The light fixture must be documented to cost at least \$100.00 when originally purchased;
 - (2) The fixture cannot be brought into compliance by changing the bulb or lighting element or installing shielding; or
 - (3) If the bulbs or other lighting elements of the fixture require replacement during the amortization period, the replacement bulbs or lighting elements shall not be rated in excess of 3,000 Kelvin.

(Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-278. General provisions.

- (a) *Shielding.*
 - (1) Unless exempted elsewhere in this article, all outdoor lighting shall be fully shielded.
 - (2) New streetlights shall be fully shielded fixtures of approved historical design, utilizing a minimum output consistent with the safety of drivers and pedestrians.
 - (3) Mounting height or topography or proximity to other properties may cause public or private outdoor light fixtures to require additional shielding to prevent glare, light trespass, or an unsafe condition on properties other than the one on which it is installed.
 - (4) All lighting that illuminates the translucent portion of a greenhouse or solarium must be shielded so that no direct light shines outside of the structure and no more than four percent of the reflected or refracted illumination is allowed to escape outside the structure.
 - (5) Outdoor light fixtures with a maximum output of 200 lumens per fixture, regardless of the number of bulbs, may be left unshielded provided the source of the light is not visible from any other property and the fixture conforms to all other regulations of this article. The output from these fixtures shall not exceed ten percent of the lumens per net acre allowed by this article.
- (b) *Light trespass.*

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- (1) Light trespass is prohibited. No luminaire installed within the city, except governmental owned streetlights, may create conditions of light trespass. Governmental owned street lights may only create light trespass below it within 100 feet of its installed location.
 - (2) All outdoor lighting, except governmental owned streetlights, shall be shielded so that the light source shall not be visible from any other property.
- (c) *Outdoor sports facilities.* Lighting at public and private outdoor sports facilities, including playing fields, arenas, tracks, and swimming pools, shall:
- (1) Be shielded to the greatest practical extent to reduce glare, safety hazards, light trespass, and light pollution;
 - (2) Provide levels of illuminance that are adjustable according to task, allowing for illuminating levels not to exceed nationally recognized Illuminating Engineering Society of North America (IESNA) standards according to the appropriate class of play, as well as for lower output during other times, such as when field maintenance is being actively performed;
 - (3) Be provided exclusively for illumination of the surface of play and adjacent viewing stands, and not for any other application, such as lighting a parking lot;
 - (4) Be extinguished by 11:00 p.m. or within one hour of the end of active play. The outdoor sports facility lighting shall be fitted with mechanical or electronic timers to prevent lights from being left on accidentally overnight; and
 - (5) Be exempted from the other regulations of this article if its design and installation, as certified by a professional engineer (PE) licensed in the state of Texas, adheres to the version of the International Dark Sky Association's *Criteria for Community-Friendly Outdoor Sports Lighting Operative* at the time when the construction permit is submitted to the city for review.
- (d) *Towers.* No lighting of towers and associated facilities is allowed, except by permit, and except as required by the Federal Aviation Administration or other federal or state agency. In coordination with the applicable federal or state agency, an applicant shall determine the maximum height of the tower that would not require lighting. If a proposed tower would require lighting, the applicant shall demonstrate that a tower height that requires lighting is necessary. Such justification shall include documentation showing:
- (1) Coverage limitations;
 - (2) Type of system (*e.g.*, cellular, radio, television);
 - (3) Technical and engineering details of the lighting to be installed; and
 - (4) Requirements of federal, state, and local agencies.
- If a tower height that requires lighting is justified, slowly blinking red lights must be used at night. White strobe lights at night are prohibited.
- (e) *Color temperature.*
- (1) The correlated color temperature (CCT) of luminaires shall not exceed 3,000 Kelvins.
 - (2) Luminaires rated below 2500 Kelvin are encouraged for better nighttime visibility.
- (f) *Service station canopies and other building overhangs.* All luminaires mounted on or recessed into the lower surface of service station canopies or other overhangs shall be fully shielded and utilize only flat lenses or windows. Shielding must be provided by the luminaire itself, and not by surrounding structures such as canopy edges. Light directed on service station pumps may be angled to illuminate the pump to the level of federal standards and to shield the light from normal view.
- (g) *General curfew.*

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- (1) For all nonresidential zoning districts:
 - a. All privately owned exterior lighting not adaptively controlled shall be extinguished by 11:00 p.m. or within one hour of the end of normal business hours, whichever occurs later.
 - b. Exterior lighting with adaptive controls shall reduce lighting to 25 percent or less of the total outdoor light output allowed by 11:00 p.m. or within one hour of the end of normal business hours, whichever occurs later. Adaptive controls may be used to activate lights and resume normal light output when motion is detected and be reduced back to 25 percent or less of total outdoor light output allowed within five minutes after activation has ceased, and the light shall not be triggered by activity off property.
 - c. Businesses whose normal operating hours are 24 hours per day are exempt from this provision.
 - (2) All public lighting not adaptively controlled must be fully extinguished by 11:00 p.m., or within one hour of the end of occupancy of the structure or area to be lit, whichever is later.
 - (3) All outdoor lighting is encouraged to be turned off when no one is present to use the light.
- (h) *Lumen caps.*
- (1) The lumen per net acre values are an upper limit and not a design goal; design goals should be the lowest levels that meet the requirement of the task. Lumen per net acre values exclude governmental owned street lights used for illumination of public rights-of-way and outdoor recreation facilities.
 - (2) The following lumen caps apply:
 - 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.
- (i) *Adaptive controls.* All new public lighting, including streetlights, will incorporate adaptive controls, such as timers, motion-sensors, and light-sensitive switches, to actively regulate the emission of light from light fixtures such that the lighting of areas is restricted to times, places, and amounts required for safe occupancy.
- (j) *Flagpoles.* Property owners are encouraged to not illuminate flagpoles at night, but rather to hoist flags after dawn and lower flags before sunset. If flags are illuminated at night, lighting of up to a total of two flag poles per property is permitted with the following conditions:
- (1) Flagpoles with a height greater than 20 feet above ground level shall be illuminated only from above. This may be achieved by utilizing a luminaire attached to the top of the flagpole or a luminaire mounted above the top of the flagpole on a structure within 15 feet of the flagpole and must comply with all sections of this article. The total light output from any luminaire mounted on top of or above a flagpole shall not exceed 800 lumens.
 - (2) Flagpoles with a height equal to or less than 20 feet above ground level may be illuminated from below. If ground-level illumination is used, flagpoles may be illuminated with up to two spotlight type luminaires, utilizing shields or diffusers to reduce glare, whose maximum combined lumen output is 75 lumens per linear foot of pole height, measured from the level of the luminaire above grade to the top of the flagpole. Luminaires shall be mounted so that their lenses are perpendicular to the flagpole and the light output points directly toward the flag(s).
- (k) *Prohibitions.* The use of the following types of outdoor lighting are prohibited, except as specifically exempted here or elsewhere in this article:
- (1) Sag-lens or drop-lens fixtures.

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- (2) Any luminaire that uses mercury vapor lamps.
 - (3) Searchlights, sky beams, and similar lighting, except as required by response personnel during emergency conditions.
 - (4) Any light that dynamically varies its output by intermittently fading, flashing, blinking, or rotating. This type of lighting includes strobe lighting.
- (l) *Warranting.* New installations of outdoor lighting will only be installed on public property, including right-of-way, upon determination by the city manager that a public safety hazard exists in the area to be lit and that the hazard can only be effectively mitigated through the use of outdoor lighting and not through some other passive means, such as reflectorized roadway paint or markers.
- (Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-279. Plan submission and compliance review.

- (a) An individual applying for a compliance review or building permit under this article intending to install new outdoor lighting or update existing outdoor lighting shall file a lighting plan with the city. A lighting plan shall be filed at the same time as any other plans required by the city. The applicant may obtain a document from the city that lists all of the items that comprise a proper and complete outdoor lighting submittal. The submittal shall contain, at a minimum, the following:
 - (1) Plans indicating the number and location on the premises of proposed and existing light fixtures, the type of light fixture, the manufacturer's order number, the lamp type, Kelvin rating, initial lumens produced, the mounting height for each fixture, adaptive controls, building elevations for any structure whose interior lighting is defined as outdoor lighting per this article and the manufacturer's specification sheet for each light fixture.
 - (2) The number of acres or part of an acre that is to be illuminated contiguously, the square footage of the footprint for each structure within the area to be illuminated; and
 - (3) Any other evidence that the proposed installation will comply with this article.
- (b) The lighting plan shall be reviewed by the city manager to determine compliance with this article, taking into account all factors, including levels of illuminance, luminance, glare, safety hazards, light trespass, and light pollution. The city manager shall approve or reject the plan within 30 days of submission, returning it to the applicant with a written explanation. The applicant shall not install any outdoor lighting until receiving approval of the lighting plan. After the lighting plan is approved, no substitutions may be made for approved light fixtures without re-submitting the plan for review with the substitutions.

(Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-280. Exemptions, temporary permitting, amendments, and public nuisance.

- (a) *Exemptions.* This article exempts the following:
 - (1) Decorative holiday lighting.
 - (2) String, festoon, bistro, and similar lighting, provided that the emission of no individual lamp exceeds 50 lumens. These lights must be rated at or below 3,000 Kelvin.
 - (3) Underwater lighting of swimming pools and similar water features.
 - (4) Lighting required by law to be installed on surface vehicles and aircraft;

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- (5) Airport lighting required by law;
 - (6) Lighting required by federal or state laws or regulations;
 - (7) Temporary emergency lighting needed by law enforcement, fire, and other emergency services as well as building egress lighting whose electric power is provided by either battery or generator;
 - (8) Lighting employed during emergency repairs of roads and utilities provided such lighting is deployed, positioned, and aimed such that the resulting glare is not directed toward any roadway or highway or residence;
 - (9) Temporary lighting at construction projects provided such lighting is deployed, positioned and aimed such that the resulting glare is not directed toward any roadway or highway or residence;
 - (10) Temporary lighting for theatrical, television, performance areas, or events provided the lights are positioned safely and do not create issues of light trespass.
- (b) *Amendment.* City council may amend this article as local conditions change and as changes occur in the recommendations of nationally recognized organizations such as the Illuminating Engineering Society of North America and the International Dark-Sky Association.
 - (c) *Public nuisance.* Any violation of this article that results in light trespass or an unreasonable interference with the common and usual use of any other property is hereby declared to be a public nuisance.
 - (d) *Notification.* All applicants for building permits will be notified of this article.
- (Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-281. Exhibits.

Exhibit A. Light Trespass

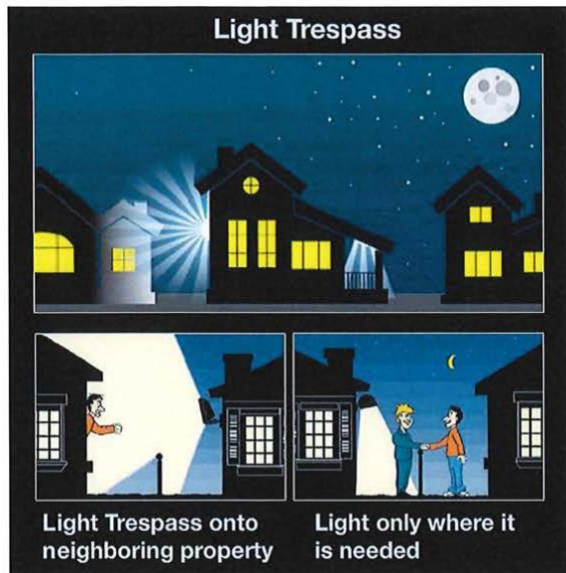
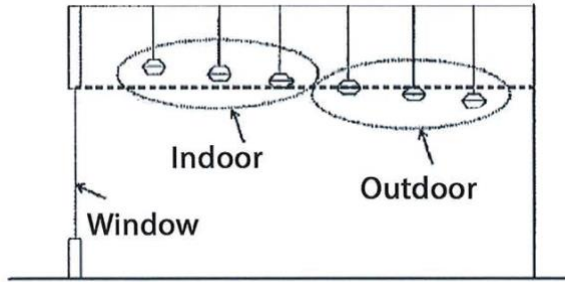


Exhibit B. Outdoor/Indoor Lighting



Elevation view showing an example of a nonresidential application of indoor lighting, labeled "Outdoor", which is will be subject to this article. The example presumes the structure in question is not elevated such that any of the luminaires labeled "Indoor" may be seen from any other property. If the structure is elevated such that the luminaires labeled "Indoor" are visible from another property then, they are actually "outdoor lighting" and subject to this article. All luminaries under skylights or other translucent roofing materials are subject to this article just as the fixtures behind the window are in this example.

(Ord. No. 2023-03, § 1, 1-24-2023)

Sec. 26-282. Violations; penalty.

- (a) A person who violates any provision of this article commits an offense.
- (b) An offense under this article is punishable by a fine not to exceed \$2,000.00.
- (c) A separate offense occurs each day or part of a day that the violation is committed, continued, or permitted.
- (d) The remedies and procedures in this section and in other laws are cumulative law, and the use of any particular remedy or procedure does not prevent the application or enforcement of any other law.

(Ord. No. 2023-03, § 1, 1-24-2023)

Secs. 26-283—26-289. Reserved.