

## **ARTICLE 3.800 OUTDOOR OR EXTERIOR LIGHTING**

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### **Sec 3.801 Purpose**

The regulation and limitation of outdoor or exterior lighting is intended to reduce or prevent light pollution. While effective outdoor lighting is necessary for safety and security, ill-advised exterior lighting can contribute to unwarranted glare and light trespass while failing to maintain desirable levels of energy efficiency. In addition to more energy efficient and cost effective lighting, a dark and visible night sky has potential aesthetic, ecological and economic benefits.

#### **HISTORY**

*Adopted by Ord. [18-06-21-03](#) on 6/21/2018*

### **Sec 3.802 Definitions**

Words and phrases used in this article shall have the meanings set forth in this section. Terms that are not defined below, but are defined elsewhere in the Code of Ordinances, shall be given the meanings set forth therein. Words and phrases not defined in the Code of Ordinances shall be given their common, ordinary meaning unless the context clearly requires otherwise.

Adaptive controls mean mechanical or electronic devices used with 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.

Applicant means a person or entity who submits an application for a required approval. To be qualified as an applicant, the person or entity must have sufficiently documented legal authority or proprietary interests in the land to commence and maintain proceedings. To avoid confusion, the term will not include anyone other than the property owner(s), tenant(s), or a duly authorized agent and representative of the property owner. As to enforcement between tenant(s) and property owner(s) of a particular piece of property, the property owner(s) shall have ultimate liability for violations of this article.

City means the City of Lago Vista, an incorporated municipality located in Travis County, Texas.

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.

Full cutoff fixture or Fully shielded fixture means a fixture, as installed, that is designed or shielded in such a manner that all light emitted by the fixture, either directly from the luminaires or indirectly from the fixture, is prevented above a horizontal plane running through the lowest point on the fixture where light is emitted.

Holiday lighting means temporary lighting used for a specific celebration of one of the following types: festoon type low output lamps, limited to small individual bulbs on a string; low-output lamps used to internally illuminate yard art; or flood or spot lights producing less than 2,000 lumens each.

Initial lamp lumen means the product of the initial number of lumens produced by the light emitting elements of an individual luminaire, multiplied by the luminaire efficiency. If the efficiency is not known, assume 70 percent for a single-family or two-family residential luminaire and 100 percent for a multifamily or nonresidential luminaire.

Lamp or bulb means the light-producing source installed in a luminaire.

Light Pollution means any adverse impact of artificial light including, but not limited to: light trespass, uplighting, uncomfortable distractions to the eye, or any artificial light that diminishes the ability to view the night sky. The term is often used to denote urban sky glow.

Light trespass means light emitted from fixtures that causes light to be cast on a property other than the one where it is installed, upwards toward the sky or any other location where it is not wanted or needed.

Lighting means any source of light other than natural light emitted from celestial objects or fire. The term includes any type of lighting, fixed or movable, and designed or used for illumination of buildings or homes, including but not limited to: streetlights, canopies, searchlights, externally or internally on signs, and luminous elements and fixtures attached to buildings, structures, poles, ground mounted or any other location.

Logo means a representation or symbol adopted by a business, organization, or an individual that is used to promote instant public recognition.

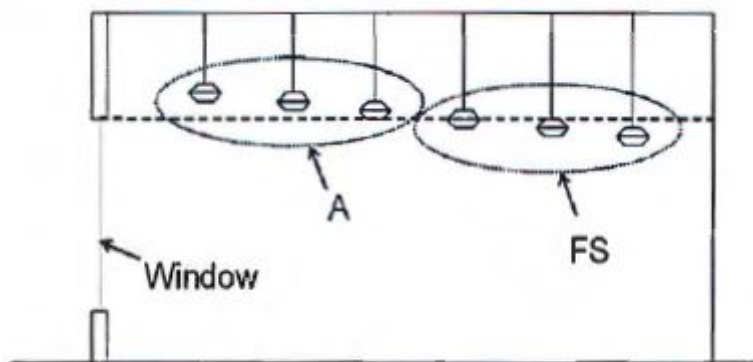
Lumen means a unit of measurement that quantifies the amount of light produced by a lamp or bulb or emitted from a fixture (as distinct from "watt," a measure of power consumption). The lumen rating associated with a given lamp is typically indicated on its packaging or available from the manufacturer.

Lumens per acre means the total number of initial lamp lumens produced by all fixtures utilized in outdoor lighting on a property divided by the total area of the property in acres, or part of an acre.

Luminaire means the complete lighting unit, including the lamp, the fixture and other parts or components.

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

Outdoor or Exterior lighting means temporary or permanent lighting that is installed, located or used in such a manner to cause light to be cast outdoors. Any multifamily or nonresidential fixture that is installed indoors but causes light to shine outside is considered outdoor lighting for the purpose of administering these regulations (See figure A).



**Figure A:** Elevation view showing an application of indoor lighting, labeled 'FS,' which is subject to these requirements and indoor lighting, labeled 'A,' which is installed so that it is typically not subject to these requirements.

Private lighting means outdoor light fixtures that are owned or leased or operated or maintained or controlled by individual persons, including but not limited to 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 or leased or operated or maintained or controlled by the City or other governmental entity or entities completely or partly funded by grants obtained by the City or its agents from federal, state or private sources. 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.

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 lighting intended for uses of a limited duration; such as holiday decorations, civic events or construction projects.

Total outdoor light output means the total amount of light, as determined by the sum of the initial lamp lumens attributed to each outdoor or exterior light fixture located on the property.

Uplighting means lighting that causes light rays to project above a horizontal plane running through the lowest point on the fixture where light is emitted.

#### HISTORY

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

Amended by Ord. [22-06-16-01](#) on 6/16/2022

### **Sec 3.803 Scope And Applicability**

All outdoor or exterior lighting shall be installed in conformance with the provisions of this article, applicable electrical codes, energy codes, and building codes, except as provided herein.

- (a) New Construction. All outdoor or exterior lighting associated with newly constructed residential and nonresidential structures permitted after the effective date of this article shall comply with these requirements and other applicable regulations unless otherwise exempted.
- (b) Renovations and Repairs. All residential and nonresidential renovations or repairs requiring a permit after the effective date of this article shall comply with these requirements and other applicable regulations unless otherwise exempted. All renovations or repairs that include installation or replacement of exterior or outdoor lighting in excess of 6,200 lumens within any 90 day period shall require a permit.
- (c) Nonconforming Existing Lighting. All existing outdoor or exterior lighting that was legally permitted or installed before the effective date of this article, but does not conform to the standards imposed shall be considered nonconforming. Nonconforming outdoor or exterior lighting is allowed to remain except as described below.
  - (1) Residential Property. All existing outdoor or exterior lighting located on a property that is impacted by improvements authorized by a building permit is required to comply with these requirements within 90 days as a condition of the approval. Without regard to previous permits, all residential property shall comply with these requirements no later than June 21, 2028.
  - (2) Multifamily and Nonresidential Property.
    - (A) All nonconforming existing outdoor or exterior lighting that becomes damaged or inoperable and is subsequently repaired, replaced or improved, shall comply with the requirements for new construction.

(B) If a nonconforming use or structure has been abandoned for more than twelve months all outdoor or exterior lighting on the property must be brought into compliance as a condition of reoccupation or reuse.

(C) Occupied multifamily and nonresidential property shall be brought into compliance with outdoor or exterior lighting requirements no later than June 21, 2023. A new property owner may request a three-year extension to come into compliance if the purchase occurred within this timeframe whenever renovations, repairs or exterior or outdoor lighting replacement requires a permit in accordance with the provisions above.

(3) Street Lighting. Non-conforming street lights shall be allowed to remain until replacement is otherwise required. Replacement fixtures and lamps shall comply with the requirements of this article as specified below.

(d) Exemptions and Exceptions.

- (1) Outdoor or exterior lighting fixtures, including landscape lighting with a maximum output (regardless of the number of lamps) of 800 lumens per fixture for shielded fixtures, and 450 lumens per fixture for unshielded fixtures. However, the collective output from these fixtures shall be included in the total output limitation specified below.
- (2) String, festoon, bistro, and similar lighting, provided that the emission of no individual lamp exceeds fifty (50) lumens, and no installation of such lighting exceeds, in the aggregate, 6,200 lumens. These lights must be rated at or below 2,700 Kelvin.
- (3) Existing nonconforming recreation facility lighting subject to curfews described herein.
- (4) Decorative holiday lighting for no more than 60 days of any calendar year during the hours of 6:00 a.m. to 11:00 p.m. each day, except that flashing holiday lights are prohibited on nonresidential properties.
- (5) Underwater lighting of swimming pools and similar water features.
- (6) Lighting required by law to be installed on surface vehicles and aircraft.
- (7) Airport lighting required by law.
- (8) Lighting required by federal or state laws or regulations.
- (9) 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.
- (10) 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.
- (11) 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.
- (12) Temporary lighting, permitted in this article, for theatrical, television, performance areas, or special events provided the need for temporary lighting is referenced in the required permit, lights are positioned safely, and do not result in light trespass.

HISTORY

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

Amended by Ord. [22-06-16-01](#) on 6/16/2022

### **Sec 3.804 Procedures And Compliance**

#### **(a) Single-family and Two-family Residential Outdoor Lighting.**

- (1) Upon receipt of single-family or two-family residential building permit application, the Development Services Department shall provide either a summary or a copy of these requirements. Continued pursuit of a permit shall serve as acknowledgment that the applicant has been notified of these outdoor lighting regulations.
- (2) Compliance with outdoor lighting requirements for single-family or two-family residences will be reviewed onsite, and verified before issuance of a Certificate of Occupancy. A separate lighting permit apart from the building permit is not required. However, the Building Official may require manufacturer's data on any outdoor light fixture or lamp as part of that review.

#### **(b) Multifamily and Nonresidential Outdoor Lighting.** All applications for multifamily and nonresidential building permits or land use planning review, including subdivision construction plans, which include installation of outdoor lighting fixtures shall include lighting plans conforming to the provisions of these regulations. Submittals shall include the following information as applicable to each specific project:

- (1) Plans indicating the location, type, intensity, and height of all existing and proposed outdoor light fixtures, including those indoor fixtures defined as outdoor or exterior lighting by these provisions;
- (2) Specifications and descriptions of all fixtures, including lamps, photometric data showing the pattern of light emission and intensity, shielding devices, light standards or other supports, which may be provided as manufacturer's standard literature;
- (3) Calculations of the total outdoor light output, the total outdoor light output per acre, the total illuminated property area and both the fixture and lamp data used in the calculations; and
- (4) Additional information requested by the Development Services Director and Building Official and required to verify compliance.

#### **(c) Compliance.**

- (1) These regulations are not intended to prohibit the use of any design, materials, methods or operation not specifically prescribed herein, provided such alternative has been approved by the city manager or a designee, upon a finding that:
  - (A) The alternative meets or exceeds the applicable standard, and
  - (B) The alternative is otherwise satisfactory and consistent with the legislative intent of these regulations.
- (2) The city shall have the power to administer and enforce the provisions of this article as specified in Section 1.109 of the Lago Vista Code of Ordinances. In addition, any violation of this article is hereby declared to be a public nuisance, justifying the use of any or all remedies available for abatement as specified in those provisions.

#### **HISTORY**

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

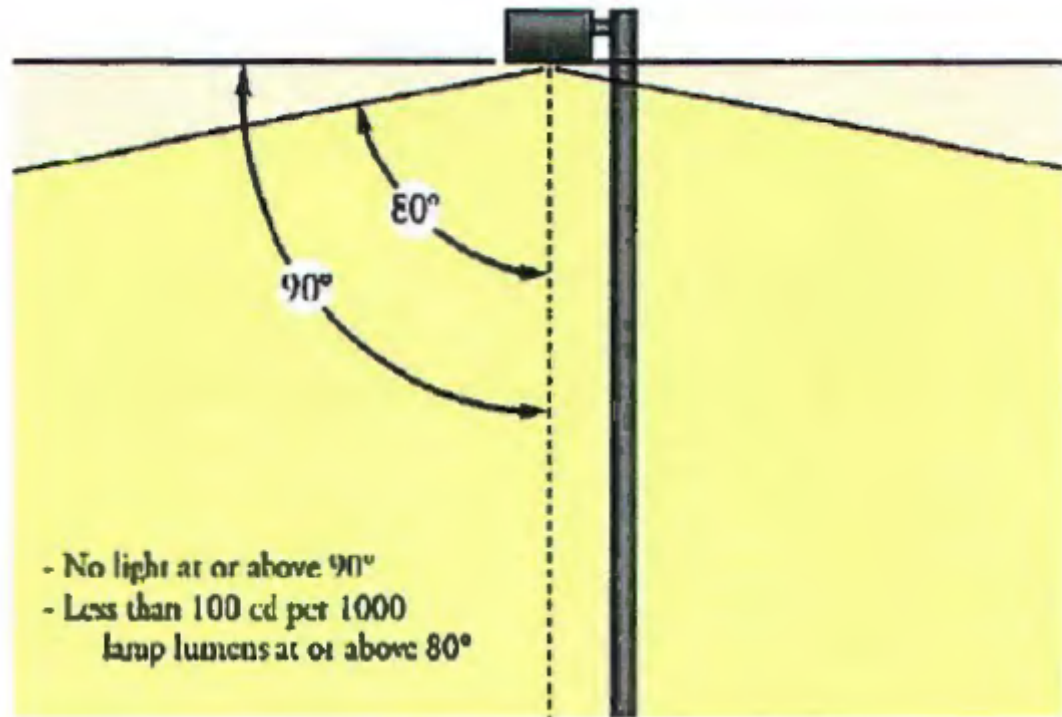
### **Sec 3.805 Lamps, Fixtures, Shielding And Output Limits**



(a) Street Lights.

- (1) Streetlights shall be full cut-off fixtures in order to limit light trespass (see Figure B). To the extent that public streetlights are replaced or repaired with a light emitting diode (LED) luminaire, the LED luminaire shall have a correlated color temperature (CCT) not to exceed 2,700 Kelvin. New private streetlights associated with new development shall comply with additional requirements contained in Chapter 10 and have a correlated color temperature (CCT) not to exceed 2,700 Kelvin.

Full cutoff fixture



**Figure B:** Full cutoff fixtures do not allow any light to be emitted above the fixture.

(2) Requests for the Removal or Placement of Additional Public Street Lights

- (A) Any person that desires a street light be installed or removed on any public street must obtain the written permission of all residents residing within 500 feet of the proposed location for the street light. Such written permission must be on a petition signed by the residents living within 500 feet of the proposed location. The petition shall provide for the name(s) of the resident, the lot number, the telephone number and whether or not the resident supports installing the street light at the proposed location. Signatures are not required from owners of vacant lots within 500 feet of the proposed street light location. The petition shall be attached to a street light request form approved by the city manager.
- (B) After the signatures have been obtained, the petition shall be given to the city manager for review. The city manager shall verify that the appropriate signatures have been obtained and that all residents within 500 feet of the proposed location agree to the installation or removal of the street light. The city manager shall then determine whether or not the change is in the city's best interest and, if so, shall make a request to the city's electric provider that a street light be installed.
- (C) The city manager shall inform the city's electric provider that no street lights are to be installed or removed unless requested by the city manager. After providing ten

(10) days' notice to the offending party that they are in violation of this article, the city manager may order the street light to be removed or reinstalled.

(b) Shielding.

- (1) All outdoor lighting fixtures, except existing public streetlights, shall be full-cut-off fixtures so that the luminous elements of the fixture are not visible from any other property (see Figures C and D).



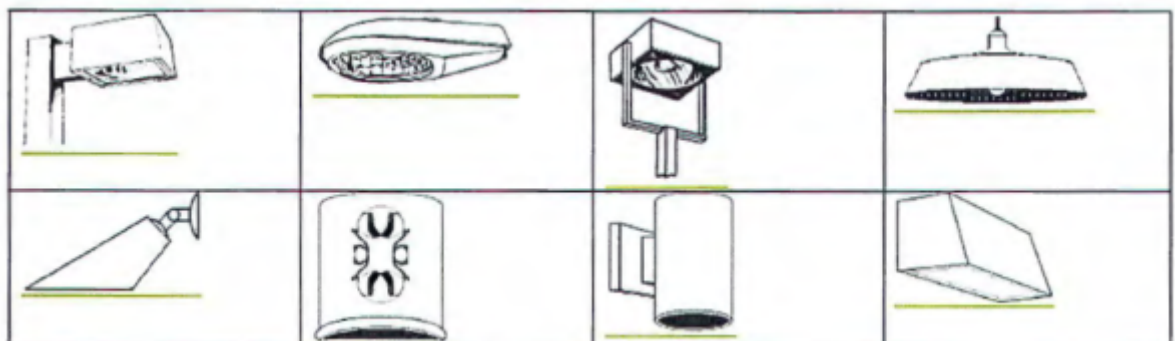
**Figure C:** Mounting height or proximity to property lines may cause the lamp. Above are two examples of shielding.

Examples of Acceptable/ Unacceptable Lighting Fixtures



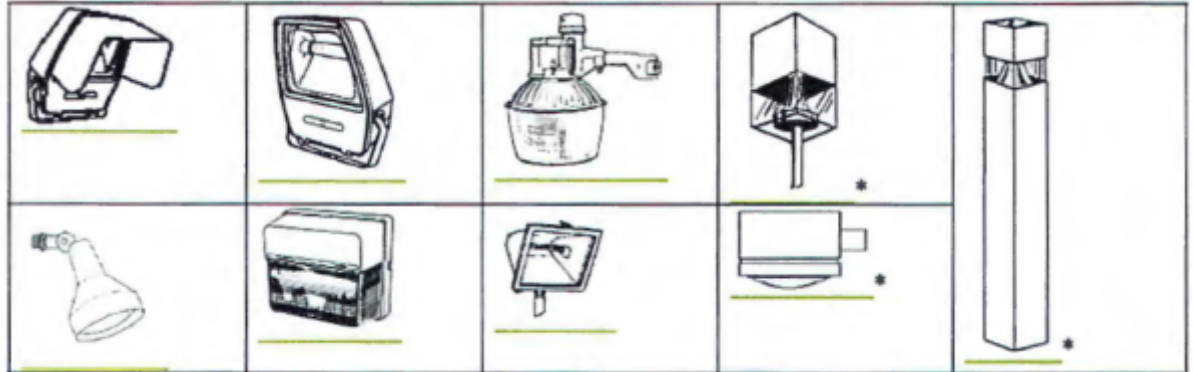
**Figure D:** The lights on the left are nonconforming due to inadequate shielding. Those on the right can be used in most cases. However, the mounting height and proximity to the property line may require additional shielding to prevent the lamp from being visible from other property.

- (2) All outdoor light fixtures shall be full cutoff fixtures, except as otherwise permitted by this article (see Figure E for acceptable fixtures and F for unacceptable fixtures).





**Figure E:** Full cutoff fixtures are closed on top and mounted such that the bottom opening is horizontal. The mounting height and location may require additional shielding to prevent the lamp from being visible from any other property. A practical way to determine if a light fixture is a full cutoff fixture is that the lamp, any reflective surface or lens cover (clear or prismatic) is NOT visible when viewed from above or the side.



**Figure F:** This figure illustrates examples of fixtures that are NOT full cutoff fixtures.

**\*Note:** Even though the lamps in these fixtures are shielded when viewed from the side or above, reflective surfaces within the fixtures or lens covers are directly visible from the side.

#### (c) Output Limits.

- (1) Total outdoor light output (excluding governmental owned street lights used for illumination of public rights-of-way and outdoor recreation facilities) of any nonresidential property shall not exceed 100,000 lumens per acre in any contiguous illuminated area.
- (2) Total outdoor light output (excluding governmental owned street lights used for illumination of public rights-of-way and outdoor recreation facilities) of any residential property shall not exceed 25,000 lumens per acre in any contiguous illuminated area.
- (3) The correlated color temperature (CCT) of outdoor lighting must not exceed 2,700 Kelvin.
- (4) Outdoor lighting that illuminates highly reflective surfaces like water, white surfaces or mirrors shall be calculated at twice the rated value when determining compliance with total lumen output limits.

#### (d) Outdoor Sports Facilities.

- (1) Except as specifically exempted herein, lighting at public and private outdoor sports facilities, including but not limited to playing fields, arenas, tracks, swimming pools, and associated parking lots and walkways will be shielded to the greatest practical extent to reduce glare, safety hazards, light trespass, and light pollution in accordance with all of the following requirements:
  - (A) All lighting shall 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; and
  - (B) All light must be extinguished by 11:00 p.m. or within one (1) 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.

- (2) Outdoor sports facility lighting will 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

(e) Prohibitions.

- (1) Outdoor uplighting is prohibited, except in cases where the fixture is shielded by a roof overhang or similar structural shield and a licensed architect or engineer has certified and stamped a prepared lighting plan that ensures that the light fixtures will not cause light to extend beyond the structural shield, except as otherwise permitted elsewhere herein.
- (2) The installation of any mercury vapor fixture or lamp for use as outdoor lighting is prohibited.
- (3) The installation or use of any form of outdoor laser light projection is prohibited.
- (4) The operation of searchlights for advertising purposes is prohibited except when associated with a special event lasting no longer than one night.
- (5) The installation of any wall pack style fixture for use as outdoor lighting is prohibited unless the fixture is rated by the manufacturer as full cut-off and otherwise complies with the shielding requirements of this article. Examples of acceptable wall packs, when mounted with light directed downward only are shown in Figure H.



**Figure H:** Examples of acceptable wall packs.

- (6) The installation of any barn-light style fixture for use as outdoor lighting is prohibited unless the fixture includes a full opaque reflector instead of the standard translucent lens and otherwise complies with the shielding requirements of this article. An example of barn-light style with and without the required opaque reflector is shown in Figure I.



**Figure I:** Examples of unacceptable and acceptable barn-style light fixture shielding.

## HISTORY

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

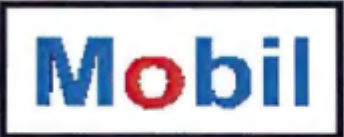

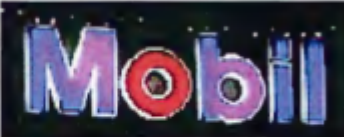



Amended by Ord. [22-06-16-01](#) on 6/16/2022

### **Sec 3.806 Lighting For Outdoor Signs And Decorative Lighting**

(a) Indirect Sign Lighting. Outdoor externally illuminated signs shall conform to all provisions of this article and the sign regulations contain in Article 4.800 of Chapter 4 of the Lago Vista Code of Ordinances. In particular, such lighting shall conform to the lamp source, shielding restrictions and be included in the output limit calculation. All upward-directed sign lighting is prohibited except as expressly stated otherwise herein.

(b) Internal Sign Lighting and Neon Signs.

- (1) Outdoor internally illuminated signs (backlit), whether freestanding or building-mounted, shall be constructed with an opaque background and translucent letters and symbols or with a colored background and lighter letters and symbols (see Figure L). The internally illuminated or backlit portion of the sign cannot be white, cream, off-white, or yellow unless it is part of a registered logo. White, cream, off-white or yellow are permitted in the logo only, provided that such colors in the logo shall represent not more than one-third of the total sign area permitted.

Light Background <input checked="" type="checkbox"/>	Colored Background <input checked="" type="checkbox"/>	Opaque Background <input checked="" type="checkbox"/>
		
		

**Figure L:** Internally illuminated Signs

- (2) Lamps used for internal or external illumination shall not be included in the total outdoor light output calculation. Luminance levels for operation between sunset and sunrise shall not exceed 117 lumens per square foot (100 candelas per square meter). The illuminated area of an individual sign shall not exceed 200 square feet (18.6 square meters).
  - (3) Neon signs shall be treated as internally illuminated signs for the purposes of these regulations and shall not be included in the total outdoor light output calculation. However, neon lighting extending beyond the "sign area" as defined in Section 4.801 below, shall be considered decorative lighting as described below.
- (c) Decorative (non-sign) Lighting. Other internally illuminated panels or decorations not considered signage by Article 4.800 of Chapter 4 of the Lago Vista Code of Ordinances (such as illuminated canopy margins or building panels), shall be considered decorative lighting, and shall be subject to the standards applicable to outdoor or exterior lighting, including but not limited to lamp source, shielding standards and total outdoor light output limits.

- (d) Destination Wayfinding Sign Lighting. Lighting for destination wayfinding signs shall be provided by ground mounted fixtures directly in front of the sign faces, with light sources shielded from a public right-of-way and limited to arterial street locations. Destination wayfinding signs on other streets shall include reflective surfaces and may not be illuminated.

HISTORY

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

Amended by Ord. [22-06-16-01](#) on 6/16/2022

**Sec 3.807 Lighting Curfews**

- (a) The following provisions shall apply to all property except one or two-family residences.
- (1) All exterior lighting except streetlights that are not adaptively controlled shall be extinguished by 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever occurs later.
  - (2) Exterior lighting with adaptive controls shall reduce lighting to 25% or less of the total outdoor light output allowed by 11:00 p.m. or within one (1) 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% or less of total outdoor light output allowed within 5 minutes after activation has ceased, and the light shall not be triggered by activity off property.
  - (3) Businesses whose normal operating hours are (24) twenty-four hours per day are exempt from this provision.
- (b) All public lighting not adaptively controlled must be fully extinguished by 11:00 p.m., or within one (1) hour of the end of occupancy of the structure or area to be lit, whichever is later.
- (c) All outdoor lighting is encouraged to be turned off when no one is present to use the light.

HISTORY

Adopted by Ord. [18-06-21-03](#) on 6/21/2018

Amended by Ord. [22-06-16-01](#) on 6/16/2022