

Lighting (Repeal PAMC Section 18.40.250)

- (a) Purpose. The intent of this section is to establish exterior lighting standards to reduce light pollution. Exterior lighting of parking areas, pathways, and common open spaces, including fixtures on building facades and free-standing lighting should aim to:
- (1) Reduce light pollution and its adverse effects on environment, wildlife habitat, and human health.
 - (2) Minimize the visual impacts of lighting on abutting or nearby properties and from adjacent roadways.
 - (3) Provide safe and secure access on a site and adjacent pedestrian routes.
 - (4) Achieve maximum energy efficiency.
 - (5) Complement the architectural design of the project.
- (b) Definitions. Notwithstanding the definitions in Chapter 18.04 of the Municipal Code, for purposes of this chapter only, the following words and phrases are defined as follows:
- (1) “Correlated Color Temperature” or “Color Temperature” means a specification of the color appearance of the light emitted by a light source, measured in Kelvin (K). Warmer color temperatures are a lower number, and cooler color temperatures are a higher number.
 - (2) “Dark Sky Compliant or Equivalent” means a light fixture from which all light emitted, directly or indirectly, is projected below a horizontal plane.
 - (3) “Fully shielded” means a light fixture constructed and installed in such a manner that all light emitted, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal plane (from the bottom of the lamp).
 - (4) “Glare” means light entering the eye directly from a light fixture or indirectly from reflective surfaces that causes visual discomfort or reduced visibility to a reasonable person.
 - (5) “High Intensity Lighting” means lighting that mimic natural daytime lighting for outdoor recreational facilities.
 - (6) “Lamp” means, in generic terms, a source of optical radiation (i.e., “light”), often called a “bulb” or “tube.” Examples include incandescent, fluorescent, high-intensity discharge (HID) lamps, and low-pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and arrays.
 - (7) “Light pollution” means the material adverse effect of artificial light, including, but not limited to, glare, light trespass, sky glow, energy waste, compromised safety and security, and impacts on the nocturnal environment, including light sources that are left on when they no longer serve a useful function.
 - (8) “Lumen” means the common unit of measure used to quantify the amount of visible light produced by a lamp or emitted from a light fixture (as distinct from “Watt,” a measure of power consumption).

- (9) “Luminaires” means outdoor illuminating devices, lamps, and similar devices, including solar powered lights, and all parts used to distribute the light and/or protect the lamp, permanently installed or portable.
- (10) “Seasonal lighting” means lighting installed and operated in connection with holidays or traditions.
- (11) “Security lighting” means lighting intended to detect intrusions or other criminal activity occurring on a property or site.
- (12) “String lights” means light sources connected by free-strung wires or inside of tubing resulting in several or many points of light.
- (c) Applicability. For the purposes of this Section, all new structures and exterior modifications that require separate planning approval shall comply with the lighting standards and guidelines set forth in this section.
- (d) Lighting Guidelines
 - (1) Lighting of the building exterior, parking areas and pedestrian ways should be of the lowest intensity and energy use adequate for its purpose, and be designed to focus illumination downward to avoid excessive illumination above the light fixture.
 - (2) Unnecessary continued illumination, such as illuminated signs or back-lit awnings, should be avoided. Internal illumination of signs, where allowed, should be limited to letters and graphic elements, with the surrounding background opaque. Illumination should be by low intensity lamps.
- (e) Lighting Standards
 - (1) Shielding
 - (A) All outdoor lighting shall be fully shielded, directed downward to meet the particular need, and away from adjacent properties and rights-of-way to avoid light trespass.
 - (B) Exterior lighting fixtures shall be mounted less than or equal to 15 feet from grade to top of fixture in low activity or residential parking lots and 20 feet in medium or high activity parking lots.
 - (C) Light fixtures shall be located at least three feet from curbs and ten feet from driveways or intersections, to avoid obstructing clear sight distance triangles.
 - (D) No direct off-site glare from a light source shall be visible above three feet at a public right-of-way.
 - (E) Exceptions for shielding requirements shall be applied to the following types of lighting:
 - (i) Low voltage landscape lighting such as that used to illuminate fountains, shrubbery, trees, and walkways, do not have to be shielded fixtures and may use uplighting, provided that they use no more than ten (10) watt incandescent bulb or LED equivalent or a maximum of 150 lumens, and not directed toward the right-of-way.

- (ii) Low voltage lighting used to illuminate outdoor art or public monuments that do not have to be shielded fixtures.
- (iii) Lighting located on property lines (including zero lot line developments), provided it is controlled by a motion sensor that automatically extinguishes the lights within 10 minutes of activation.
- (iv) String Lighting pursuant to Section 18.40.250(e)(3)

(2) Lighting Height.

- (A) Exterior lighting fixtures shall be mounted less than or equal to 15 feet from grade to top of fixture in parking lots in residential development and 20 feet in parking lots with commercial and mixed-use development.

(3) Illumination Level

- (A) All light sources shall be Dark Sky Compliant or Equivalent and have a maintained correlated color temperature of 3,000 Kelvin or less.
- (B) Where the light source is visible from outside the property boundaries on an abutting residential use, such lighting shall not exceed 0.5 foot-candle as measured at the abutting property line.
- (C) The maximum light intensity on a site shall not exceed a maintained value of 5 foot-candles. Areas of higher or lower levels of illumination should be indicated on project plans.

(4) Lighting Control. Lighting controls shall be implemented to avoid unnecessary outdoor lighting. Automated control systems, such as motion sensors and timers, shall be used to meet the outdoor lighting requirements.

- (A) All outdoor lighting shall be fully extinguished or be motion sensor operated by 10:00 p.m. or when people are no longer present in exterior areas, whichever is later.
- (B) All lighting activated by motion sensor shall be set up to extinguish no more than 10 minutes after activation.
- (C) All lighting shall be automatically extinguished using a control device or system, including but not limited to photocells or photocontrols, when there is sufficient daylight available, except for lighting under canopies or lighting for tunnels, parking garages, or garage entrances.
- (D) Interior Lighting. Interior lighting shall be shielded to eliminate glare and light spillover beyond the perimeter property line of the development.

(E) Exceptions.

- (i) Any lighting at building entrances, parking areas, walkways, and driveways area required to remain illuminated after 10:00 p.m. by the California Building Code or state law.
- (ii) Lighting of an appropriate intensity, allowed in conjunction with uses that are permitted to operate past 10:00 p.m., with a conditional use permit; and

- (iii) Outdoor solar powered pathway lights that are 25 lumens or less.
- (iv) Lighting that illuminates a pedestrian pathway (examples include bollard, in-place step, or building mounted), provided that such lighting is a maximum height of four (4) feet above the pathway, fully shielded, and downward directed.
- (v) Outdoor recreational facilities operated for general public use shall extinguish the outdoor lighting at 10:30 p.m.

(f) Special Purpose Lighting.

- (1) Outdoor Security Lighting. Security lighting may be provided when necessary to protect persons and property. When security lighting is utilized only the following standards shall apply:

- (i) Security lighting shall be controlled by a programmable motion-sensor device, except where continuous lighting is required by the California Building Code. All lighting activated by motion sensors shall extinguish no more than 10 minutes after activation. Automated controls shall be fully programmable and supported by battery or similar backup.
- (ii) Security lighting shall be downward directed, fully shielded, and not be mounted at a height exceeding the limits established in Section 18.40.250, measured from the adjacent grade to the bottom of the fixture.
- (iii) Security lights intended to illuminate a perimeter, such as a fence line, are permitted only if such lights do not result in light trespass above 0.5 foot-candle onto an adjacent or nearby property, with the illumination level measured at the property line between the lot on which the light is located and the adjacent lot, at the point nearest to the light source.
- (iv) Motion-activated security lights shall not use luminaires that exceed 100-watt incandescent bulb or LED equivalent, or a maximum of 1,600 lumens.

- (2) Outdoor Recreational Facilities Lighting. For Outdoor Recreational Facilities and/or athletic fields shall conform to the following standards:

- (i) Illuminating Engineering Society (IES) lighting guidelines according to the appropriate class of play or activity.
- (ii) Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications like lighting a parking lot.
- (iii) Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance).
- (iv) Off-site impacts of the lighting will be limited to the greatest practical extent possible.
- (v) Lights must be extinguished by 10:00 p.m. except when the facilities are being used for active play and the lights are equipped with a timer.
- (vi) Timers that automatically extinguish lights must be installed to prevent lights being left on accidentally overnight.

(3) Gasoline Service Station Lighting

- (i) Lighting fixtures in the ceiling of canopies shall be fully recessed or mounted directly to the underside of the canopy. All lighting fixtures shall be located so as to shield direct rays from adjoining properties or public rights-of-way.
- (ii) Light fixtures shall not be mounted on top of the fascia of such canopies.
- (iii) The maximum light intensity under the canopy shall not exceed an average maintained foot-candle (horizontal) of 12.5, when measured at finished grade.
- (iv) No free-standing lighting shall be higher than 15 feet above finished grade.
- (v) The fascia of such canopies shall not be illuminated.

(4) String Lighting.

- (i) String lighting is not considered holiday or seasonal lighting.
- (ii) String lighting must not exceed 3,000 Kelvin or 42 lumens and shall not be blinking or chasing.
- (iii) For nonresidential areas, string lighting shall be extinguished at 10:00 pm or 2 hours after close of business, whichever is later.
- (iv) For commercial and mixed-use areas, string lighting shall be limited to designated outside dining or display areas or common open space (i.e. courtyard or patio), and subject to Director approval

(5) Lighting near Streams. In addition to lighting standards established in Section 18.40.250(e), lighting near streams shall conform to the following requirements:

- (i) Nighttime lighting shall be directed away from the riparian corridor of a stream.
- (ii) The distance between nighttime lighting and the riparian corridor of a stream should be maximized.

(6) Parklets. Lighting for any parklets should comply with the lighting standards established in the Permanent Parklet Program.

(g) Prohibited Lighting. The following types of lighting are prohibited except emergencies by police, fire, or medical personnel or at their direction:

- (1) Outdoor lighting that blinks, flashes, or rotates.
- (2) Lighting that unnecessarily illuminates any other lot or substantially interferes with use or enjoyment of that lot.
- (3) High intensity lighting for recreation courts on private property.
- (4) Searchlights, aerial lasers, or spotlights.

(h) Exemptions. The following types of lighting are exempt from the lighting requirements of the section:

- (1) Lighting for signs. See Chapter 16.20 for lighting requirements for signs.
 - (2) Temporary construction or emergency lighting
 - (3) Short-term lighting authorized by a special events or special use permits
 - (4) Seasonal lighting during the period of October 15 through January 15 of each year
 - (5) Required lighting to comply with Building Code, Fire Code, or state law. To the extent permitted by Building Code, Fire Code, or state or federal law such lighting shall additionally comply with the requirements of this section.
 - (6) Lighting for Airport Operations. Nothing in this section shall be interpreted to restrict, limit, or otherwise regulate lighting that, in the reasonable judgment of the Airport Manager, is prudent or necessary for airport operations, airport safety, or air navigation in connection with operations at the Palo Alto Municipal Airport.
- (i) California Building Code. If any conflict exists with the provisions of this section, the standards in the California Building Code shall prevail.
 - (j) Public Facilities. At the discretion of the Director, deviations from the lighting requirements may be granted for public facilities if the deviation is necessary for the operational efficiency, maintenance, or safety of the facility, and remains consistent with the overall intent and purpose of the lighting standards.
 - (k) Public Rights-of-Way. Lighting in public rights-of-way shall comply with the standards established in Title 16.