

Ordinance No. _____

Ordinance of the Council of the City of Palo Alto Repealing and Replacing Section 18.40.250 (Lighting) of Chapter 18.40 (General Standards and Exceptions) and Amending Chapters 18.10, 18.12, 18.28 and Section 18.40.230 of Title 18 (Zoning) of the Palo Alto Municipal Code to Adopt New Outdoor Lighting Regulations

The Council of the City of Palo Alto ORDAINS as follows:

SECTION 1. Findings and Declarations. The City Council finds and declares as follows:

- A. The term “dark sky” generally refers to achievement of significant reduction in light pollution so that the sky returns or becomes closer to its natural nighttime darkness.
- B. Adhering to Dark Sky principles, which promote responsible outdoor lighting practices, can significantly reduce light pollution and mitigate its harmful effects. These principles emphasize using shielded, downward lighting, and selecting appropriate lighting colors and intensities.
- C. On January 29, 2024, the City Council selected four City Council priorities, one of which is the Climate Change & Natural Environment – Protection & Adaptation, and included an objective to “approve a bird safe glass and wildlife light pollution protections ordinance.”
- D. On February 14, 2024, and July 18, 2024, the Architectural Review Board conducted study sessions and provided feedback on the draft Dark Sky Ordinance.
- E. On August 14, 2024, the Planning and Transportation Commission reviewed the draft ordinance and provided feedback. However, they did not make a recommendation and asked staff to return with more information and continued the hearing to a date uncertain.
- F. On October 30, 2024, the Planning and Transportation Commission recommended that City Council adopt the ordinance.
- G. The ordinance aligns with Dark Sky principles and protects the night sky, protecting wildlife and supporting a sustainable and resilient community.

SECTION 2. Section 18.40.250 (Lighting) of Chapter 18.40 (General Standards and Exceptions) of Title 18 (Zoning) of the Palo Alto Municipal Code is repealed in its entirety and replaced with a new Section 18.40.250 (Lighting) to read as follows:

18.40.250 Lighting

- (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 the 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; and
 - (5) Complement the architectural design of the project.
- (b) Definitions. For purposes of this chapter, 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) “Fully Shielded” means a luminaire 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 luminaire, is projected below the horizontal plane extending from the bottom of the lamp.
 - (3) “Glare” means light entering the eye directly from a luminaire or indirectly from reflective surfaces that causes visual discomfort or reduced visibility to a person.
 - (4) “Lamp” means, in generic terms, a source 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.
 - (5) “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.
 - (6) “Lumen” means the common unit of measure used to quantify the amount of visible light produced by a lamp or emitted from a luminaire (as distinct from “Watt,” a measure of power consumption).
 - (7) “Luminaire” 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.
 - (8) “Seasonal lighting” means lighting installed and operated in connection with holidays or traditions within the time period specified in Section 18.40.250(d)(4). String

lighting used outside these periods is not considered seasonal lighting and shall be subject to requirements in Section 18.40.250(f)(6).

- (9) "Security lighting" means lighting intended to detect intrusions or criminal activity occurring on a property or site. Also commonly referred to as perimeter lighting.
 - (10) "String lighting" means light sources connected by free-strung wires or inside of tubing resulting in several or many points of light.
- (c) Applicability. The outdoor lighting standards and guidelines set forth in this Section shall apply to the following projects:
- (1) All newly constructed structures and buildings; or
 - (2) Structures or buildings proposing a Substantial Remodel, as defined in Section 16.14.070; or
 - (3) New installation of outdoor luminaires requiring a building permit.
- (d) Exemptions. The following types of lighting are exempt from the lighting requirements of the section:
- (1) Illuminated street numbers;
 - (2) Temporary construction or lighting for emergency personnel;
 - (3) Lighting authorized by a special event, special or temporary use permit;
 - (4) Seasonal lighting during the period of October 15 through January 15 of each year;
 - (5) 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; or
 - (6) Lighting for Emergency Shelters. Lighting for emergency shelters shall be subject to PAMC 18.14.060.
- (e) Lighting Standards.
- (1) Shielding
 - (A) All outdoor lighting shall be fully shielded and directed to avoid light trespass. No lighting shall trespass more than 0.5-foot candle as measured at the property line.
 - (B) Exceptions for shielding requirements shall be applied to the following types of lighting:

- (i) Low voltage landscape uplighting used to illuminate fountains, shrubbery, trees, and walkways, outdoor art or public monuments provided that they use no more than a 10-watt incandescent bulb or LED equivalent or emit no more than 150 lumens. These luminaires may not direct light towards the public right-of-way;
 - (ii) Sidewalk-facing lighting for zero lot line developments, provided the luminaires are motion-activated and automatically extinguish within five minutes without further activation; or
 - (iii) String lighting pursuant to Section 18.40.250(f)(5).
- (2) Parking Lot 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 and Color Temperature
- (A) All light sources shall have a correlated color temperature of 2,700 Kelvin or less.
 - (B) The maximum outdoor light intensity on a site shall not exceed an average value of 5 foot-candles.
- (4) Lighting Control.
- (A) Lighting Curfew. All outdoor lighting shall be fully extinguished or be motion sensor operated by 10:00 p.m., two hours after the close of business, 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 after no more than five minutes without further activation.
 - (C) All lighting shall be automatically extinguished using a control device or system when there is sufficient daylight available, except for lighting under canopies or lighting for tunnels, parking garages, or garage entrances.
 - (D) Exceptions for Lighting Control.
 - (i) Any lighting at building entrances, parking areas, walkways, and driveways area;
 - (ii) Outdoor pathway lights that emit 25 lumens or less; or
 - (iii) 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 and fully shielded.

- (f) Special Purpose Lighting. The standards in this section shall prevail over any conflicting standard in subsection (e).
- (1) Low Density Residential Lighting. In addition to the lighting standards in the section, the following lighting requirements shall be applicable to projects in R-1, R-2, RE, RMD, NV-R1, or NV-R2.
- (A) When abutting any residential use, no spillover of lighting to adjacent properties shall be allowed.
- (B) A maximum of 1,260 lumens shall be allowed for each fully shielded outdoor lighting. No more than 420 lumens shall be allowed for permitted non-shielded outdoor lighting.
- (C) Skylights shall limit illuminance and glare during night hours. Glare shall be mitigated through the use of translucent glass, shading systems, and interior light placement. Skylights shall not use white glass.
- (D) Height for Recreational and Security Lighting. Free-standing lighting shall be a maximum of twelve feet (12') in height for those that were installed on or after March 11, 1991.
- (2) 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:
- (A) Security lighting shall be controlled by a programmable motion-sensor device. All lighting activated by motion sensors shall extinguish after no more than five minutes without further activation. Automated controls shall be fully programmable and supported by battery or similar backup.
- (B) Security lighting shall be 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 luminaire.
- (C) 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.
- (D) Motion-activated security lights shall not use lamps that exceed 100-watt incandescent bulb or LED equivalent, or a maximum of 1,600 lumens.
- (3) Athletic Facilities Lighting. Outdoor athletic facilities shall conform to the following standards:

- (A) Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and adjacent proximity areas for public safety.
 - (B) Illumination levels shall be adjustable based on the task (e.g., active play vs. field maintenance).
 - (C) Off-site impacts of the lighting will be limited to the greatest practical extent possible.
 - (D) Lights shall be extinguished by 10:30 p.m. except when the facilities are being used for active play and maintenance before or after permitted events, and the lights are equipped with a timer.
 - (E) Timers that automatically extinguish lights shall be installed to prevent lights being left on accidentally overnight.
- (4) Automobile Service Station Lighting
- (A) Lighting fixtures in the ceiling of canopies shall be fully recessed or mounted directly to the underside of the canopy. All luminaires shall be located so that no lighting is directed towards the adjoining property or public rights-of-way.
 - (B) Luminaires are not permitted on top of the canopy fascia.
 - (C) The maximum light intensity under the canopy shall not exceed an average foot-candle of 12.5, when measured at finished grade.
 - (D) No free-standing lighting shall be higher than 15 feet above finished grade.
 - (E) The canopy fascia shall not be illuminated.
- (5) Outdoor Space Above Ground Floor. These requirements apply to all outdoor spaces located above ground level, including, but not limited to, rooftop gardens, rooftop restaurants or bars, balconies, and decks.
- (A) Any lighting shall be shielded from public views and any luminaires shall be fully shielded and no uplighting shall be permitted.
 - (B) Lights shall be dimmable to control glare and placed on timers to turn off after 10:00 p.m. or as permitted pursuant to Section 18.40.250(e)(4)(D)
 - (C) No light trespass shall be allowed more than 0.5 foot-candle as measured beyond the perimeter of the roof deck or other outdoor space above the ground floor.
- (6) String Lighting.
- (A) String lighting color temperature shall not exceed 2,700 Kelvin and no individual lamp that is part of a string lighting installation shall exceed a rating of 42 lumens. No string lighting shall be blinking, flashing, or chasing.

- (B) 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).
- (7) Parklets. Lighting for any parklets shall comply with the lighting standards established in the Permanent Parklet Program.
- (g) Prohibited Lighting. The following types of lighting are prohibited except when used by emergency service personnel during an emergency:
- (1) Outdoor lighting that blinks, flashes, or rotates; or
 - (2) Searchlights, aerial lasers, or spotlights.
- (h) Lighting for Signs. See Chapter 16.20 for lighting requirements for signs.
- (i) Additional Provisions and Conflict Precedence. Lighting required by the Building Code, Fire Code, or state or federal law shall additionally comply with the requirements of this section, unless these requirements necessarily conflict with the aforementioned Codes and laws. In the event of a conflict, the standards in the applicable Codes and laws shall prevail.
- (j) Historic Resources. The Director may grant an exception to the requirements of this Section if the applicant provides documentation demonstrating that implementation of the lighting requirements in this ordinance would impair the historical integrity and character-defining features of the building and create an adverse impact to the building's historical, architectural, and cultural significance.
- (k) Public Facilities. Public Facilities, including City-owned and operated facilities, shall comply with the outdoor lighting standards of this Section to the extent feasible. The Director may grant adjustments to any applicable lighting standards for such facilities if the adjustment is necessary for the efficient operation, maintenance, or safety of the facility, or to ensure public safety and security; and is consistent with the overall intent and purpose of this Section. A written request for an adjustment, including supporting documentation, shall be submitted and shall be reviewed according to the applicable review procedures in PAMC Section 18.77 associated with the proposed development.

SECTION 3. Subsection (e) of Section 18.40.230 (Rooftop Gardens) of Chapter 18.40 (General Standards and Exceptions) of Title 18 (Zoning) of the Palo Alto Municipal Code is amended to read as follows (additions underlined; deletions ~~struck through~~):

(e) ~~Any lighting shall be shielded from public views and have full cutoff fixtures that cast downward facing light, or consist of low level string lights; no up-lighting is permitted. Lights shall be dimmable to control glare and placed on timers to turn off after 10:00 p.m. Photometric diagrams must be submitted by the applicant to ensure there are no spillover impacts into windows or openings of adjacent properties.~~ For lighting requirements, refer to Section 18.40.250.

SECTION 4. Subsection (g) of Section 18.10.040 (Development Standards) of Chapter 18.10 (Low Density Residential (RE, R-2 and RMD) Districts) of Title 18 (Zoning) of the Palo Alto Municipal Code is amended to read as follows (additions underlined; deletions ~~struck through~~):

(g) Lighting in R-2 District

~~—In the R-2 district, recreational and security lighting shall be permitted only so long as the lighting is shielded so that the direct light does not extend beyond the property where it is located. Free-standing recreational and security lighting installed on or later than March 11, 1991, shall be restricted to twelve feet (12') in height. For lighting requirements, refer to Section 18.40.250.~~

SECTION 5. Subsection (k) of Section 18.12.040 (Site Development Standards) of Chapter 18.12 (R-1 Single-Family Residential District) of Title 18 (Zoning) of the Palo Alto Municipal Code is amended to read as follows (additions underlined; deletions ~~struck through~~):

(k) Lighting

~~—Recreational and security lighting shall be permitted only so long as the lighting is shielded so that the direct light does not extend beyond the property where it is located. Free-standing recreational and security lighting installed on or later than March 11, 1991 shall be restricted to twelve feet (12') in height. Direct light from outdoor fixtures shall only fall on the walls, eaves, and yard areas of the site on which it is located. Outdoor fixtures shall have lens covers or reflectors that direct the light away from the neighboring properties. For lighting requirements, refer to Section 18.40.250.~~

SECTION 6. Subsection (n) of Section 18.28.270 (Additional OS District Regulations) of Chapter 18.28 (Special Purpose Districts) of Title 18 (Zoning) of the Palo Alto Municipal Code is amended to read as follows (additions underlined; deletions ~~struck through~~):

(n) Light and Glare

~~—Exterior lighting should be low-intensity and shielded from view so it is not directly visible from off-site. The light emitted from skylights shall be minimal during the night hours. Utilizing treatments such as translucent glass, shading systems, and interior light placement can reduce the night glare. Skylights shall not use white glass. For lighting requirements, refer to Section 18.40.250.~~

SECTION 7. If any section, subsection, clause or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portion or sections of the Ordinance. The Council hereby declares that it should have adopted the Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

SECTION 8. The Council finds that this project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061 of the CEQA

Guidelines, because it can be seen with certainty that there is no possibility that the ordinance will have a significant effect on the environment and Section 15308, as an action by a regulatory agency to protect the environment.

SECTION 9. This ordinance shall be effective on the thirty-first day following its adoption.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

NOT PARTICIPATING:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

APPROVED:

Assistant City Attorney

City Manager

Director of Planning & Development
Services