

Sample Language for Light Pollution Mitigation Bylaws and Ordinances

Intended Purpose

The intended purpose of providing this sample language (pg 2-4) is to give communities and municipalities a starting point for implementing a light pollution mitigation strategy. This language may be copied entirely or in part, by anyone, for use in a light pollution bylaw or ordinance. It may be modified to add, remove, or revise language as needed, and users are welcome to reach out to the DLC (info@designlights.org) for assistance in developing a bylaw or ordinance that achieves the specific needs of your municipality.

Municipalities are encouraged to reference the DLC LUNA program by name in their bylaw/ordinance requirements as this simplifies the procurement process and removes the burden of reviewing the technical characteristics of lighting from the municipality. Products that are DLC LUNA qualified are by definition, also qualified to the DLC SSL Qualified Products List (QPL), which ensures they meet efficiency, quality, and most rebate eligibility requirements.

Disclaimer

The model language for bylaws and ordinances are meant to be used as guides only, and not to be considered a legal document or guarantee of compliance with any local regulation or statute. For information regarding legal compliance and applicability check with the applicable jurisdiction.

Prevention of Light Pollution

- A. Purpose and Intent.** The purpose of this Bylaw/Ordinance is to create standards for outdoor lighting so that its use does not unreasonably interfere with the reasonable use and enjoyment of property within the [town or city] of [municipality]. It is the intent of this section to encourage, through the regulation of the types, construction, installation and uses of outdoor electrically powered illuminating devices, lighting practices and systems which will reduce light pollution, light trespass and glare in order to preserve and enhance the natural, scenic, and aesthetic qualities of [municipality], conserve energy and decrease lighting cost without decreasing nighttime safety, security, and productivity, and preserve the night sky as a natural resource to enhance nighttime enjoyment of property within [municipality].
- B. Uses.** All municipal uses, uses in industrial and commercial districts, and multi-family residential use. Special Permit uses and Signs in all districts are subject to this section.
- C. Definitions.** Except as noted hereinafter, all definitions are provided in the Zoning Bylaw. Unless the context clearly indicates otherwise, certain words and phrases used in this section shall mean the following:

CUTOFF ANGLE: The angle formed by a line drawn from the direction of the direct lightrays at the light source with respect to the vertical, beyond which no direct light is emitted.

DESIGNLIGHTS CONSORTIUM (DLC) - The DLC is a non-profit organization improving energy efficiency, lighting quality, and the human experience in the built environment. They collaborate with utilities, energy efficiency programs, manufacturers, lighting designers, building owners, and government entities to create rigorous criteria for lighting performance that keeps up with the pace of technology.

DIRECT LIGHT — Light emitted directly by a lamp, off a reflector, or through a refractor of an outdoor light fixture.

FOOT-CANDLE – Standard measurement of illumination in the United States, defined as one lumen per square foot.

FILTERED — When referring to an outdoor light fixture, means that the fixture is to be fitted with a glass, acrylic, or other translucent enclosure of the light source.

GLARE: Light emitted from a light fixture with intensity great enough to produce annoyance, discomfort, or a reduction in a viewer's ability to see.

HEIGHT OF Light Fixture: The vertical distance from the finished grade of the ground directly below to the lowest direct light emitting part of the light fixture.

ILLUMINATING ENGINEERING SOCIETY (IES) – An industry-backed non-profit organization that is the recognized technical and educational authority on illumination science. They publish and maintain technical standards through an accredited process and provide best practice recommendations for lighting installations.

LAMP: The component of an outdoor light fixture that produces light.

LIGHT FIXTURE: A complete lighting system, including the assembly that houses a lamp or lamps, and which may include a housing, a mounting bracket or pole socket, a lamp holder, a ballast, a reflector or mirror, and/or a refractor, lens, or diffuser lens.

LIGHT TRESPASS: Direct light emitted by an outdoor lamp fixture that shines beyond the boundaries of the property on which the outdoor light fixture is installed.

SHIELDED LIGHT FIXTURE: A lamp and fixture assembly designed to eliminate light being emitted in an unwanted direction. Fixtures may include an array of shielding options such as back, front or side to prevent light trespass or uplight shielding to prevent light emitting light above a horizontal plane.

UPLIGHT: Direct light emitted by an outdoor light fixture above a horizontal plane through the fixture's lowest light-emitting part. Uplight is quantified using the IES U-rating system, U1-U5.

QUALIFIED PRODUCTS LIST (QPL) – A list of products that have been examined, tested, and have satisfied all applicable qualification requirements.

D. Lighting Plan. When the installation or replacement of outdoor lighting is part of a proposal for which site review approval is required under these regulations, the [regulatory body] shall review and approve the lighting installation as part of its site review approval. The lighting plan shall consist of:

- 1) A site plan, drawn to scale, showing buildings, landscaping, parking areas, and all proposed outdoor lighting fixtures.
- 2) Specifications for all proposed lighting fixtures and control systems for all characteristics outlined in section E. Control of Glare, Light Trespass, and Operation.
- 3) Proposed mounting height of outdoor lighting fixtures.

E. Control of Glare, Light Trespass, and Operation. To prevent light pollution, all products must be either 1) DLC LUNA qualified (currently listed on QPL) or meet the following additional requirements:

- 1) Replacement lamps and retrofit kits are excluded from consideration.
- 2) Product must have a maximum IES uplight rating of U1
- 3) Correlated Color Temperature (CCT) must not exceed 3000K
 - i. Products with color tuning capabilities outside of this range are ineligible.
- 4) Continuous dimming capability to 20% of max output power or lower
- 5) Products that include an arm or tenon mount must have a maximum allowable tilt of +/- 10 degrees
- 6) Products must have at least one shielding option or accessory available (e.g., house-side shield, etc.)
- 7) Mitigation of Glare and Light Trespass
 - i. All Light Fixtures shall be equipped with whatever shielding, filters, lenses,

or cutoff devices required to eliminate Light Trespass onto any street or abutting lot or parcel, to eliminate Glare perceptible to persons on any street or abutting lot or parcel and to minimize uplighting.

- ii. Outdoor Lighting Fixtures intended solely to illuminate any freestanding surface (signs, walls, landscaping elements, etc.) shall be 1) mounted above the surface and face downward to prevent uplight and 2) shielded so that Direct Light is confined to the surface only.

8) Lighting Curfew

- i. Outdoor lighting fixtures must be dimmed to 20% of max output power or lower between midnight and dawn.
- ii. Dimming must be performed automatically by a control system.
- iii. When occupancy sensors are used to control outdoor lighting fixtures, this solution shall be considered as fulfilling the requirements of the Lighting Curfew.

F. Exemptions.

- 1) Fossil fuel light. All outdoor Light Fixtures producing light directly by the combustion of natural gas or other fossil fuels are exempt from all requirements of this bylaw.
- 2) Holiday lighting during the months of November, December and January shall be exempt from the provisions of this regulation, provided that such lighting does not create dangerous glare on adjacent streets or properties.
- 3) All light fixtures lawfully in place prior to the date of this amendment shall be grandfathered. However, any light fixture that replaces a grandfathered light fixture, or any grandfathered light fixture that is moved, must meet the standards of this regulation.

G. Special Permit. Alternative outdoor light fixtures may be allowed by Special Permit if it is found that the fixture's design and appearance are superior, significant light pollution will not be created, and light trespass and glare are minimal.