

PENNSYLVANIA OUTDOOR LIGHTING COUNCIL



MODEL OUTDOOR LIGHTING ORDINANCE

FOR USE AS A

STAND-ALONE CODE

As a model, it is recommended it be tailored, as appropriate, to suit the municipality's unique needs.

The Pennsylvania Outdoor Lighting Council recommends it would be preferable to place this language in the Zoning Ordinance or SALDO. Stand-alone ordinances too often get put on the shelf and ignored by the planners, governing body, code officers and zoning hearing boards.

PENNSYLVANIA OUTDOOR LIGHTING COUNCIL
STAND-ALONE MODEL LIGHTING ORDINANCE

07/18

SECTION 1. TITLE.

An Ordinance establishing regulations, specifications and restrictions for the use, maintenance and installation of outdoor lighting in the Municipality.

SECTION 2. SHORT TITLE

This Ordinance shall be known as and may be cited as the “Outdoor Lighting Ordinance”.

SECTION 3. PURPOSE

To require and set minimum standards for outdoor lighting to:

- A. Provide for and control lighting in outdoor public places where public health, safety and welfare are potential concerns.
- B. Protect drivers and pedestrians from the disabling glare of non-vehicular light sources.
- C. Protect neighbors and the night sky from nuisance glare and light trespass from improperly selected or poorly aimed, placed, applied, maintained or shielded light sources.
- D. Promote energy efficient lighting design and operation
- E. Protect and retain the intended character of the various portions of the Municipality

SECTION 4. APPLICABILITY

- A. All uses within the Municipality where there is interior or exterior lighting that creates a nuisance or hazard as viewed from outside, or exterior lighting that creates a nuisance when viewed from inside, including but not limited to, residential, commercial, industrial, public and private recreational/sports and institutional uses, and sign, billboard, architectural and landscape lighting.
- B. The Municipality may, in its sole discretion, require the illumination of residential subdivisions in accordance with Section 6.G below.
- C. The Municipality may, in its sole discretion, require lighting to be incorporated for other uses or locations or may restrict lighting in any of the above uses, as deemed necessary.
- D. The glare-control requirements herein contained apply to lighting in all uses, applications and locations.
- E. Temporary seasonal decorative lighting is exempt from all but the glare-control requirements of this Ordinance.
- F. Emergency lighting, as may be required by any public agency while engaged in the performance of their duties, or for illumination of the path of egress during an emergency as described in NFPA 75 and NFPA 101, are exempt from the requirements of this Ordinance.

SECTION 5. DEFINITIONS

- A. **BUG** - A rating of the amount of Backlight, Uplight and Glare of a luminaire.
- B. **Cutoff** – A lighting fixture from which no more than 2.5% of its lamp’s intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of its lamp’s intensity is emitted between 80° and that horizontal plane.
- C. **CCT** - Correlated Color Temperature - A rating of the warmth or coolness of all light output expressed in degrees Kelvin.
- D. **Footcandle** – A unit of incident light stated in lumens per square foot and measurable with an illuminance meter, a.k.a. footcandle or light meter.
- E. **Full Cutoff** – A lighting fixture from which none of its lamp’s intensity is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than 10% of the lamp’s intensity is emitted between 80° and that horizontal plane.
- F. **Fully Shielded** – A lighting fixture, from which, in the installed position, none of its light output, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture (excepting only incidental reflections from supporting brackets or arms), is projected above a horizontal plane through the fixture’s lowest light-emitting part, as determined by photometric test or

certified by the manufacturer. Any structural part of the fixture providing this shielding shall be permanently affixed.

- G. Glare – The sensation produced by lighting that causes an annoyance, discomfort or loss in visual performance and visibility to the eye.
- H. Illuminance – The quantity of incident light measured in footcandles.
- I. Light Trespass – Light emitted by a lighting installation, which extends beyond the boundaries of the property on which the installation is sited.
- J. Lumen – The light-output rating of a lamp (light bulb), as used in the context of this Ordinance.
- K. Luminaire – A complete lighting unit
- L. Shielded – The description of a luminaire from which no direct glare is visible at normal viewing angles, by virtue of its being properly aimed, oriented, and located and properly fitted with such devices as shields, barn doors, baffles, louvers, skirts or visors.

SECTION 6. LIGHTING CRITERIA

A. Illumination Levels

- 1. Lighting, where required by this Ordinance or otherwise required by the Municipality, shall have illuminances and uniformity ratios in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IES) as contained in the IES Lighting Handbook and relevant Recommended Practices or as otherwise specified herein.
- 2. Future amendments to said Lighting Handbook and Recommended Practices shall become a part of this Ordinance without further action by the Municipality.

B. Lighting Fixture Design

- 1. Luminaires shall be of a type and design appropriate to the lighting application and aesthetically acceptable to the Municipality.
- 2. For the lighting of predominantly horizontal surfaces such as, but not limited to parking areas, roadways, vehicular and pedestrian passage areas, merchandising and storage areas, automotive-fuel dispensing facilities, automotive sales areas, loading docks, cul-de-sacs, active and passive recreational areas, building entrances, sidewalks, bicycle and pedestrian paths, and site entrances, luminaires shall be aimed straight down, have no uplight and shall meet IESNA full-cutoff/fully shielded criteria. Except as may be specified elsewhere in this Ordinance, luminaires shall have a rating of B1-U0-G1 Luminaires with an aggregate rated lamp output not exceeding 500 lumens, e.g., the rated output of a standard non-directional 40-watt incandescent, 6 watt LED or 10-watt compact fluorescent lamp, are exempt from the requirements of this paragraph. In the case of decorative street lighting luminaires, the Municipality may approve the use of luminaires with an uplight component not exceeding 1%.
- 3. For the lighting of predominantly non-horizontal tasks or surfaces such as, but not limited to, facades, landscaping, signs, billboards, fountains, displays and statuary, when their use is specifically permitted by the Municipality, luminaires shall be shielded and shall be installed and aimed so as to not project their output into the windows of neighboring residences, adjacent uses, past the object being illuminated, skyward or onto a public roadway. Luminaires with an aggregate rated lamp output not exceeding 500 lumens, e.g., the rated output of a standard non-directional 40-watt incandescent or 10-watt compact fluorescent lamp, are exempt from the requirements of this paragraph.
- 4. Lamps – LED light sources shall have a color temperature that does not exceed 3000K for commercial and industrial districts, and not exceeding 2700K in residential districts.
- 5. “Barn lights,” aka “dusk-to-dawn lights,” shall not be permitted where they are visible during hours of darkness from a residential use, unless fitted with a reflector or other shielding device to block direct viewing of the light source from the adjacent use.

C. Lighting Control

- 1. All lighting shall be aimed, located, designed, fitted and maintained so as not to present a hazard to drivers or pedestrians by impairing their ability to safely traverse and so as not to create a nuisance by projecting or reflecting objectionable light onto a neighboring use or property.

2. Directional luminaires such as floodlights and spotlights, when their use is specifically approved by the Municipality, shall be so shielded, installed and aimed that they do not project their output onto the properties of neighboring residences, adjacent uses, past the object being illuminated, skyward or onto a public roadway or pedestrian way. Floodlights installed above grade on residential properties shall not be aimed out more than 45° from straight down. When a floodlight creates glare as viewed from an adjacent residential property, the floodlight shall be required to be reaimed and/or fitted with a shielding device to block the view of the glare source from that property.
3. Illumination for signs, billboards, building facades and/or surrounding landscapes for decorative, advertising or aesthetic purposes is prohibited between 11:00 p.m. and dawn, except that such lighting situated on the premises of a commercial establishment may remain illuminated while the establishment is actually open for business, and until no more than one-half hour after closing. Such lighting shall be automatically extinguished using a programmable controller.
4. Lighting for parking areas and vehicular and pedestrian traffic ways for commercial, industrial and institutional uses shall be automatically extinguished nightly within 1/2 hour of the close of the facility. On/off control shall be by astronomic programmable controller with battery or capacitor power-outage reset. When after-hours site safety/security lighting is proposed, such lighting shall not be in excess of twenty-five (25) percent of the number of fixtures required or permitted for illumination during regular business hours. The use of greater than 25% of the normal lighting for all-night safety/security lighting shall require Municipality approval, based on the unique nature of the use or elevated area crime justification. Alternatively, where there is reduced but continued onsite activity throughout the night that requires site-wide even illumination, the use of dimming circuitry to lower illumination levels by at least 50% after 11:00 p.m. or after normal business hours, or the use of motion-sensor control, shall be permitted. . .
5. Vegetation screens shall not be employed to serve as the primary means for controlling glare. Rather, glare control shall be achieved primarily through the use of such means as cutoff fixtures, shields and baffles, and appropriate application of fixture mounting height, wattage, aiming angle and fixture placement.
6. The level of illumination projected onto a residential use from another property shall not exceed 0.1 initial vertical footcandle, measured line-of-sight at any point on the receiving property. The level of illumination projected onto a non-residential use shall not exceed 1.0 initial vertical footcandle measured line of sight at the property line. This footcandle value, however, shall not be used as a criterion for assessing glare control onto the property.
7. Directional fixtures for such applications as façade, fountain, feature and landscape illumination shall be aimed so as not to project their output beyond the objects intended to be illuminated, shall be extinguished between the hours of 11 p.m. and dawn and shall not be in conflict with the Municipality's aim to maintain its intended character.
8. Only the United States and the state flag shall be permitted to be illuminated from dusk till dawn and each flag shall be illuminated by a source or sources with a beam spread no greater than necessary to illuminate the flag. Flag lighting sources shall not exceed 7,000 lumens per flagpole.
9. The use of white strobe lighting for tall structures such as smokestacks, chimneys and radio/communications/television towers is prohibited during hours of darkness, except as specifically required by FAA.
10. Under-canopy lighting for such applications as gas/service stations, hotel/theater marquees, fast-food/bank/drugstore drive-ups, shall be accomplished using flat-lens full-cutoff luminaires aimed straight down and shielded in such a manner that the lowest opaque edge of the luminaire shall be below the light source and its light-directing surfaces, at all lateral angles around the luminaire. The average maintained illumination in the area directly below the canopy shall not exceed 20 initial footcandles, with no value exceeding 30 initial footcandles.
11. Temporary residential holiday lighting is exempt from the requirements of this Section except as it creates a hazard or nuisance.

D. Agricultural Use Criteria

1. For agricultural uses, the following criteria shall apply:
 - a. No lighting shall be permitted that shines directly onto an adjacent residential use.
 - b. No lighting shall be permitted that creates a hazard by shining onto a public right-of-way.
 - c. Floodlights and other directional luminaires whose lamp and/or reflective surfaces are visible from an adjacent residential use shall be extinguished by no later than 11 p.m. or controlled by a motion sensor.

E. Recreational Uses

1. When facilities for such outdoor recreational activities as baseball, tennis, football, miniature golf or any other recreational use permitted under the Municipality's Municipality Zoning Ordinance, are specifically permitted by the Municipality for operation during hours of darkness, the following requirements shall apply:
 - a. Lighting shall be accomplished only through the use of luminaires conforming to IESNA full-cutoff criteria, or as otherwise approved by the Municipality based on suitable control of glare and light trespass.
 - b. For new recreational facilities and for recreational facilities wishing to change their hours of operation during hours of darkness, sporting events shall be timed so that all lighting in the sports facility, other than lighting for safe exit of patrons, shall be extinguished by 11:00 p.m., regardless of such occurrences as extra innings or overtimes.
 - c. Trap shooting facilities, golf driving ranges and race tracks shall not be illuminated unless it can be demonstrated that such lighting will not create a nuisance, shine on or into any nearby residential properties or be visible to traffic on any nearby streets, roadways, or institutional or commercial parking lots. In any case, if lighting is permitted at these facilities, it shall not be accomplished by using any horizontally aimed fixtures or floodlights nor shall these fixtures be aimed at an angle greater than 45 degrees from vertical.
 - d. The outdoor recreational activities listed below shall not be illuminated if located within any residential district or sited on a nonresidential property located within 1200 feet of a residential use.
 - e. Maximum mounting heights for recreational lighting shall be in accordance with the following:
 - i. Basketball 20'
 - ii. Football 70'
 - iii. Soccer 70'
 - iv. Baseball 70'
 - v. Little League Baseball
 - 1) 200' Radius 60'
 - 2) 300' Radius 70'
 - vi. Miniature Golf 20'
 - vii. Tennis 20'
 - viii. Track 20'

F. Street and Parking Lot Lighting for Residential Applications

1. For residential developments where lot sizes are or average less than 20,000 square feet, street lighting shall be provided as follows:
 - a. At the intersection of public roads with entrance roads to the development

- b. At the intersection of roads within the development
 - c. At cul-de-sac bulb radii
 - d. At terminal ends of center median islands having concrete structure curbing, trees, signs or other fixed objects, and at cul-de-sac center islands with curbing
 - e. At defined pedestrian crossings located within the development
 - f. At other locations along the street as deemed necessary by the Board of Supervisors but in no case shall lighting fixtures be spaced more than five hundred (500) feet apart.
 - g. Where lot sizes permit the parking of less than two (2) vehicles on the lot, thereby necessitating on-street parking, street lighting shall be provided along the length of the street, in accordance with the illuminance requirements contained in Section 6.A.3.(a) above.
 - h. In multi-family developments, common parking areas shall be illuminated in accordance with the illuminance requirements contained in Section 6.A.3.(b) above.
2. In residential developments with lots of less than twenty thousand (20,000) square feet, where five (5) or more contiguous parking spaces are proposed, such spaces shall be illuminated in accordance with the illuminance requirements contained in Section 6.A.3.(b) above.
 3. On-Lot Lighting - For subdivisions of 40,000 or smaller, lighting shall be provided in accordance with the following:
 - a. Lighting Fixtures
 - i. Floodlights, spotlights and other directional sources, whether for security, architectural/decorative, task lighting or recreational purposes, shall be located, aimed and shielded in a manner that prevents the lighted aperture of the source (direct glare) from being directly visible from off the property being illuminated. LED light source correlated color temperature shall not exceed 2700K.
 - ii. Recreational lighting shall not project its light output beyond the recreational surface.
 - iii. Facade-mounted and post-top lights shall be fully shielded.
 - b. On/Off Control
 - i. All exterior lighting, except security lighting, shall be extinguished nightly by no later than 11 p.m.
 - ii. Lighting intended for all-night safety/security purposes shall be motion-sensor controlled.
 - iii. Recreational lighting shall be extinguished no later than 10:30 p.m.

G. Signs and Billboards

1. For the lighting of billboards and externally illuminated signs, fixtures shall be designed, fitted and aimed to limit the light pattern to the sign or billboard, so as not to project their output into the windows of neighboring residences, adjacent uses, past the face of the billboard or sign, skyward or onto a public roadway.
2. Billboards and externally illuminated signs shall be lighted by fixtures mounted at the top of the billboard or sign and aimed downward.
3. Billboards and signs, whether on or off premises, shall be automatically extinguished by 11:00 p.m. except that signs for businesses that remain open past 11:00 p.m. shall be allowed to be automatically extinguished no more than ½ hour past the close of business.
4. Channel letter signs shall have dimming capability to allow adjustment of sign brightness when required by the Municipality to accommodate local ambient conditions.

5. The maximum initial illumination on the face of an externally illuminated billboard or sign shall not exceed 30 vertical footcandles and shall have a maximum to minimum uniformity ratio not to exceed 6:1.
6. The illumination of billboards shall be limited to commercial and industrial zoning districts.
7. The illumination of billboards within 400' of a residential zone or use shall not be permitted.
8. Rotating, flashing, pulsing, "marching" or oscillating light sources, lasers, beacons or strobe lighting shall not be permitted.
9. LED, electronic/digital billboard and sign lighting shall only be permitted in commercial and industrial districts, shall not be allowed to operate between 11:00 p.m. and dawn when located where the sign face or its light output is visible from a residential district or use. On limited access highways, sign shall not be located within 1,000 feet of an approaching interchange or traffic-merging lanes. Except for time and weather signs, digital message shall not be permitted to change more than once each 60 seconds. From 30 minutes after sunset to 30 minutes before sunrise, the LED output shall be automatically reduced to a level that does not exceed 100 nits. Where located in an area with existing high-ambient light levels but not visible from a residential use, a sign-face brightness not exceeding 200 nits may be permitted. The sign or billboard nighttime light output shall be capable of being further dimmed if municipality so requires when the lighting is judged to create a nuisance or hazard.
10. The use of highly reflective signage that creates nuisance glare or a safety hazard shall not be permitted.
11. The lighting or relighting of signs or billboards shall require a Building Permit, which shall be granted only when the Municipality is satisfied that excessive brightness, light pollution, glare and light trespass have been mitigated to the extent possible.
12. Applications for the lighting or relighting of signs and billboards shall be accompanied by a test report of maximum luminance on sign or billboard face, catalog cuts of proposed fixtures and any glare reduction devices and a description of light sources, mounting locations, aiming angles and proposed hours of operation and method for automatically extinguishing or reducing the output of the lighting by the required hour.

H. Installation

1. Electrical feeds for pole-mounted fixtures shall be run underground, not overhead.
2. Poles supporting luminaires for the illumination of parking areas and located within the parking area or directly behind parking spaces, or where they could be hit by snow plows or wide-swinging vehicles, shall be suitably protected by being placed a minimum of five (5) feet outside paved area or tire stops, or placed on concrete pedestals at least thirty (30) inches high above the pavement or suitably shielded by steel bollards or suitably protected by other Municipality-approved means..
3. Pole-mounted fixtures shall be aimed straight down.
4. Mounting Heights - The following maximum fixture mounting heights shall prevail:
 - a. Except as permitted for certain recreational lighting and permitted elsewhere in this paragraph, luminaires shall not be mounted in excess of twenty (20) feet above finished grade of the surface being illuminated. Luminaires not meeting full-cutoff criteria, when their use is specifically allowed by the Municipality, shall not be mounted in excess of 16' AFG. Mounting height shall be defined as the distance from the finished grade of the surface being illuminated to the optical center of the luminaire. Where proposed parking lots consist of 100 or more contiguous spaces, the Municipality may, at its sole discretion, based partially on mitigation of potential off-site impacts, allow a luminaire mounting height not to exceed 25' AFG.
 - b. Mounting heights of 25' shall not be permitted when located less than 100' from a residential district or use.
5. Pole foundations shall be designed and/or approved by a structural or civil engineer taking into account luminaire projected areas, wind loading and local soil conditions.

I. Post-Installation Inspection

1. The Municipality reserves the right to conduct post-installation nighttime inspections to verify compliance with the requirements of this Ordinance and approved plans, and if appropriate, to require remedial action at no expense to the Municipality.

SECTION 7. PLAN SUBMISSION

- A. For subdivision and land-development applications where site lighting is required by this Ordinance or otherwise the Municipality, or proposed, lighting plans shall be submitted to the Municipality for review and approval with any preliminary or final subdivision/land development plan application and with any conditional use application. The Municipality may also require that lighting plans be submitted for Building Permit applications, Special Exception applications and zoning hearings. Lighting plans shall include:
 1. A site plan, complete with all structures, parking spaces, building entrances, traffic areas (both vehicular and pedestrian), vegetation that might interfere with lighting, and adjacent uses that might be adversely impacted by the lighting, containing a layout of all proposed fixtures by location, mounting height and type. The submission shall include, in addition to area lighting, exterior architectural, building-entrance, landscape lighting, etc.
 2. A point-by-point illuminance-grid plot on 10' x 10' centers (or as necessary for suitable legibility) of footcandles overlaid on the site plan, plotted out to 0.0 maintained footcandles, which demonstrate compliance with the light trespass, illuminance and uniformity requirements as set forth in this Ordinance or as otherwise required by the Municipality.
 3. The lamp lumen ratings and types, color temperature, maintenance (light-loss) factors and IES file names used in calculating the illuminance levels.
 4. Description of the proposed equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, on/off control devices, mounting heights, pole wind-loading conformance, foundation pole details and mounting methods.
 5. Landscaping plans shall contain lighting fixture locations and shall demonstrate that the site lighting and landscaping have been coordinated to minimize conflict between vegetation and intended light distribution, both initially and at vegetation maturity.
- B. When requested by the Municipality, applicant shall also submit a visual-impact plan that demonstrates appropriate steps have been taken to mitigate on-site and off-site glare and to retain the intended character of the area.
- C. Plan Notes – The following notes shall appear on the lighting plan:
 1. Post-approval alterations to lighting plans or intended substitutions for specified lighting equipment on the approved plan shall be submitted to the Municipality for review and approval prior to installation. Requests for substitutions shall be accompanied by catalog cuts of the proposed equipment that demonstrate the proposed substitution is equal to or exceeds the optical quality and maintainability of the specified luminaires; and accompanied by a lighting plan, including a point-by-point plot, which demonstrates that proposed substitutions will result in a lighting design that equals or exceeds the quality of the lighting on the approved plan.
 2. The Municipality reserves the right to conduct post-installation nighttime inspections to verify compliance with the requirements of this Ordinance and as otherwise agreed upon by the Municipality, and if appropriate, to require remedial action at no expense to the Municipality.
 3. Installer shall notify Zoning Officer to arrange for inspection and approval of all exterior lighting equipment, including building-mounted lighting, prior to its installation.
 4. All exterior lighting, including building-mounted lighting, shall meet IESNA full-cutoff or fully-shielded criteria unless otherwise specifically approved by the Municipality

SECTION 8. COMPLIANCE MONITORING

- A. Safety Hazards
 1. If appropriate officers or agents of the Municipality judge a lighting installation, including lighting poles, creates a safety or personal-security hazard, the person(s) responsible for the lighting shall be notified in writing and required to take remedial action.

2. If appropriate corrective action has not been effected within ninety- (90) days of written notification, the Municipality may commence legal action as provided in Section 10 & 11 below.

B. Nuisance Glare and Inadequate Illumination Levels

1. When appropriate officers or agents of the Municipality judge an installation produces unacceptable levels of nuisance glare, skyward light, excessive or insufficient illumination levels or otherwise varies from this Ordinance, Municipality may cause written notification of the person(s) responsible for the lighting and require appropriate remedial action.
2. If appropriate corrective action has not been effected within ninety- (90) days of notification, the Municipality may commence legal action as provided in Section 10 & 11 below. .

SECTION 9. NONCONFORMING LIGHTING

- A. Any lighting fixture or lighting installation legally installed and operative before the date of adoption of this Ordinance shall be considered as a lawful nonconformance subject to the following:
 1. Non conforming lighting shall not be changed to any other non-conforming lighting, structurally altered, altered in any way that increases its degree of nonconformance, or expanded or extended in scope,
 2. Unless minor corrective action, such as reaiming or shielding, is deemed by the Municipality to be an acceptable alternative, a nonconforming lighting fixture or lighting installation shall be made to conform with the applicable requirements of this Ordinance when:
 - a. It is deemed by the Municipality to create a safety hazard
 - b. A fixture is added or replaced with another fixture or fixtures, abandoned or relocated
 - c. There is a change in use
 3. Regardless of the requirements of Section 9.A.1.above, nonconforming lighting fixtures and lighting installations shall be made to conform with the requirements of this Ordinance or removed within three (3) years from the effective date of this Ordinance.

SECTION 10. VIOLATIONS AND PENALTIES

- A. Any person who violates or permits a violation of this Ordinance shall, upon being found liable therefore in a civil enforcement proceeding commenced by the Municipality before a District Justice, pay a fine of not more than \$500, plus all court costs including reasonable attorney's fees, incurred by the Municipality in the enforcement of this Ordinance. No judgment shall commence or be imposed, levied or payable until the date of the determination of the violation by the District Justice. If the defendant neither pays nor timely appeals the judgment, the Municipality may enforce the judgment pursuant to the applicable Rules of Civil Procedure. Each day a violation exists shall constitute a separate offense.
- B. The appropriate officers or agents of the Municipality are hereby authorized to seek legal and/or equitable relief, including injunction, to enforce compliance with this Ordinance.

SECTION 11. ABATEMENT OF NUISANCES

- A. In addition to any other remedies provided in this Ordinance, any violation of Section 6 hereof, Control of Nuisance and Disabling Glare, shall constitute a nuisance and shall be abated by the Municipality by either seeking mitigation of nuisance or appropriate equitable or legal relief from a court of competent jurisdiction.

SECTION 12. EFFECTIVE DATE.

Ordinance shall take effect five days after adoption by Municipality.