

WESTTOWN TOWNSHIP, CHESTER COUNTY, PA
LIGHTING ORDINANCE

§ 170-1514. Outdoor lighting. [Amended 3-3-2003 by Ord. No. 2003-2]

A. Purpose. The purpose is to require and set minimum standards for outdoor lighting to:

- (1) Provide lighting in outdoor public places where public health, safety and welfare are potential concerns during hours of darkness.
- (2) Protect drivers and pedestrians from the glare of nonvehicular light sources that shine directly into their eyes or reflect off surfaces and thereby impair safe traverse.
- (3) Protect neighbors and the night sky from direct glare and stray light from poorly aimed, placed, applied, maintained or shielded light sources.

B. Applicability.

- (1) Outdoor lighting shall be required for safety and personal security for uses that operate during hours of darkness where there is public assembly and traverse, including but not limited to the following uses: all residential developments, commercial, industrial, public-recreational and institutional.
- (2) Appropriate officers or agents of the Township may require that lighting be incorporated for other uses or locations, as they deem necessary.
- (3) The glare, light trespass and light pollution requirements herein contained apply to lighting in all above-mentioned uses, as well as, but not limited to, lighting for signage, architectural, site/landscape, recreational and residential uses and all jurisdictions, including public, private and municipal.

C. Definitions. As used in this section, the following terms shall have the meanings indicated:

CANDELA -- Unit of luminous intensity of a source in a given direction.

FOOTCANDLE -- A unit of illuminance equal to one lumen per square foot and measurable with an illuminance meter (footcandle or light meter).

FULL CUTOFF -- A luminaire light distribution where zero candela intensity occurs at or above an angle of 90° above nadir. Additionally, the candela per 1,000 lamp lumens does not numerically exceed 100 (10%) at or above a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.

GLARE -- The sensation produced by luminances within the visual field, which are sufficiently greater than the luminance to which the eyes have adapted, and which causes annoyance, discomfort or loss in visual performance and visibility.

ILLUMINANCE -- The quantity of light at a point on a surface measured in footcandles or lux. Horizontal footcandles are perpendicular to a horizontal surface. Vertical footcandles are perpendicular to a vertical surface.

LIGHT TRESPASS -- Light emitted by a lighting installation, which extends beyond the boundaries of the property on which the installation is sited, and which is considered unwelcome or undesirable.

LUMEN -- Unit of luminous flux, amount of light emitted from a source.

LUMINAIRE (LIGHT FIXTURE) -- A complete lighting unit consisting of a lamp, or lamps and ballast (when applicable), together with the parts designed to distribute light.

LUMINANCE -- The luminous intensity of a surface of a given projected area, in a given direction, and measurable with a luminance meter.

LUX -- A unit of light intensity stated in lumens per square meter. There are approximately 10.7 lux per footcandle.

NON CUTOFF -- A luminaire light distribution where there is no candela limitation in the zone above maximum candela.

D. Design criteria.

(1) Illuminance.

(a) Lighting, where required by this chapter, shall have intensities and uniformity ratios in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IESNA), unless deemed inappropriate or unnecessary by independent lighting consultants retained as experts by the Township. Such recommended practices are contained in the IESNA Lighting Handbook, RP-33-99 Lighting For Exterior Environments, RP-8-00 Roadway Lighting, and other IESNA Recommended Practices for specific activities such as sports lighting.

(b) Future amendments to IESNA practices shall become a part of this chapter without further action of the Township.

(c) Horizontal illuminances, or lighting levels, are measured at grade and are considered as maintained during the life of the lighting system in use.

(d) Lighting uniformity ratios determine areas of insufficient or excessive illuminances. Uniformity ratios are given as average to minimum or maximum to minimum.

(e) Examples of illumination levels for typical outdoor applications, as extracted from the IESNA RP-33-99 and RP-8-00 Recommended Practices, are presented below.

Maintained Average Illumination Levels (Lux/ Footcandles)	Uniformity Ratios (Average: Minimum) (Maximum: Minimum)
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Streets and roadways

Local commercial minimum 12.0/1.2 average maximum	9/0.9 average 6:1
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Local residential minimum 7/0.7 average maximum	4/0.4 average 6:1
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Parking (Commercial/
institutional,
industrial/municipal
use)

High activity (e.g., 10/1 average 5:1 20:1
 major athletic/civic/ minimum
 cultural events; fast 20/2 average
 food, etc.) maximum

Medium activity (e.g., 5/0.5 average 5:1 20:1
 hospitals, community minimum
 shopping centers, 10/1 average
 office parks, commuter maximum
 lots, etc.)

Low activity (e.g., 2/0.2 average 5:1 20:1
 schools, churches, minimum
 neighborhood shopping, 5/0.5 average
 multifamily maximum
 developments, etc.)

Sidewalks and bikeways 5/0.5 average 4:1
 minimum
 20/2.0 average
 maximum

Building entrances 25/2.5 average 5:1
 (Commercial/industrial/ minimum
 institutional) 50/5.0 average
 maximum

Service station 50/5 average 5:1
 dispenser areas minimum
 200/20 average
 maximum

Car dealerships 20/2.0 average 5:1
 minimum
 100/10 average
 maximum

NOTES (Apply to all classifications):

- 1 Illumination levels are maintained horizontal at grade.
- 2 Maximum average illuminance levels are applicable to commercial areas with high nighttime pedestrian activities or areas with light (brightly illuminated) surroundings.
- 3 Uniformity ratios dictate the lowest illuminance allowable based on the average selected. For example, in high activity parking areas with two fc average, the minimum level would be 2/5 or .4 fc.

(2) Luminaire design.

- (a) Luminaire shall be of a type and design appropriate to the lighting application.
- (b) For lighting horizontal tasks such as roadways, sidewalks, entrance drives and parking areas, luminaires shall meet IESNA full-cutoff criteria (no light output emitted above 90° at any lateral angle around the fixture).
- (c) Noncutoff luminaires may be approved by the Zoning Officer for historical post top luminaires, provided the source is less than 2,000 initial lumens.
- (d) The use of floodlighting, spotlighting, wall-mounted fixtures, decorative globes and spheres and other fixtures not meeting IESNA full-cutoff criteria shall be permitted only with the approval of the Township, based upon applicability in retaining the rural character of the Township and achieving acceptable glare control.
- (e) When requested by the Township, luminaires shall be equipped with or be modified to incorporate light directing and/or shielding devices such as shields, visors, skirts or hoods to redirect offending light distribution and/or reduce direct or reflected glare.
- (f) NEMA-head fixtures, a/k/a "barn lights" or "dusk-to-dawn lights" shall not be permitted where they are visible from other uses, unless fitted with optical hardware to render them full cutoff.

(3) Control of nuisance and disabling glare.

- (a) All outdoor lighting, whether or not required by this chapter on private, residential, commercial, industrial, municipal, recreational or institutional property, 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.
- (b) All outdoor luminaires shall be shielded in such a manner that no light is emitted above a horizontal plane passing through the lowest point of the light emitting element, so that direct light emitted above the horizontal plane is eliminated. All outdoor luminaires that illuminate the area under outdoor canopies shall comply with the requirement. Outdoor canopies include, but are not limited to, the following applications:
 - [1] Fuel island canopies associated with service stations and convenience stores.
 - [2] Exterior canopies above storefronts in shopping centers and malls.
 - [3] Exterior canopies above driveways and building entrances.
 - [4] Pavilions and gazebos.
- (c) Floodlights and spotlights shall be so installed or aimed that they do not project their output into the windows of neighboring residences, adjacent properties, skyward or onto a public roadway. The use of searchlights or laser source lights for advertising or entertainment purposes is prohibited without a special permit.
- (d) Unless otherwise permitted by the appropriate officers or agents of the Township, e.g., for safety or security or all-night operations, lighting for commercial, industrial, public recreational and institutional applications shall be controlled by automatic switching devices such as time clocks or combination motion detectors and photocells, to permit extinguishing outdoor lighting fixtures between 11:00 p.m. and dawn, to mitigate nuisance glare and sky-lighting consequences.
- (e) Lighting proposed for use after 11:00 p.m., or after the normal hours of operation for commercial, industrial, institutional or municipal applications, shall be reduced by 75% from then until dawn, unless supporting a specific purpose and approved by the appropriate officers or agent of the Township.

(f) All illumination for buildings and/or surrounding landscapes for decorative, advertising or aesthetic purposes is prohibited between 11:00 p.m. and sunrise, 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 one hour after closing.

(g) 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.

(h) In no case shall the intensity of illumination exceed 0.1 horizontal, and 0.1 vertical footcandles. Horizontal footcandles shall be measured at grade. Vertical footcandles shall be measured line-of-sight, five feet above grade at the property line.

(i) Externally illuminated signs and billboards shall be lighted by fixtures mounted at the top of the sign and aimed downward. Such fixtures shall be automatically extinguished between the hours of 11:00 p.m. and dawn, except as specifically approved by appropriate officers or agents of the Township.

(j) Mounting height. Lighting fixtures shall be mounted at a maximum total height of 20 feet above the ground, except such height shall be reduced to 16 feet within residentially used properties or within 200 feet of a residentially used lot, except for authorized institutional use. This height limitation shall not apply to lights needed for air safety, that solely are intended to illuminate a steeple or similar architectural feature, or that illuminate outdoor public recreation facilities.

(k) For land development applications where lighting is required (i.e., zoning hearings, conditional use hearings), the credentials of the expert in outdoor lighting shall be described in writing. If the expert testimony is provided by more than one person, the credibility of each expert may be weighed by the Township.

(l) Directional fixtures for such applications as facade, 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 11:00 p.m. and dawn and shall not be in conflict with the Township's aim to maintain its rural character.

(m) The use of white strobe lighting for tall structures such as smokestacks, chimneys and radio/communications/television towers is prohibited. No exterior luminaire shall have blinking, flashing or fluttering features.

(n) This subsection shall not restrict routine types of holiday lighting between November 15 and January 5, provided such lighting does not produce glare. No beacon light or nighttime strobe light shall be permitted. This subsection shall not restrict lights necessary to meet Federal Aviation Administration requirements.

(o) Outdoor lighting shall be limited to a maximum of 0.25 footcandles in the cases where one of the following situations exists:

- [1] When a retail business is not open to the public;
- [2] Public/private use of an area is not anticipated; and
- [3] No other use is in operation.

(p) If the type of luminaire on an existing building is being replaced, or an entire light fixture is being replaced in kind, or a light fixture is being changed to a more intensive illumination, such light fixture shall comply with § 170-1514.

(4) Installation.

(a) Setbacks. Exterior light fixtures for principal nonresidential uses shall be set back a minimum of 10 feet from a lot line of a dwelling, except for lighting necessary to illuminate pedestrian walkways or vehicle ingress or egress points.

(b) Lighting fixtures shall not be mounted in excess of 20 feet above grade.

E. Maintenance. Lighting fixtures and ancillary equipment shall be maintained so as always to meet the requirements.

F. Plan submission.

(1) For subdivision and land development applications where site lighting is required or proposed, lighting plans shall be submitted to the Township for review and approval and shall include:

(a) 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 use that might be adversely impacted by the lighting. The plan shall contain a layout of all proposed fixtures by location and type.

(b) Isofootcandle plots for individual fixture installations, or 10 feet by 10 feet illuminance-grid plots for multifixture installations, which demonstrate compliance with the intensity and uniformity requirements as set forth in this chapter. Also, vertical footcandles at property line, five feet above finished grade and horizontal footcandles at grade, at property line.

(c) Description of the proposed equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, on/off control devices, mounting heights, pole foundation details and mounting methods.

(2) Appropriate officers or agents of the Township may elect, at their discretion, to require that lighting plans for other than subdivision and land development applications also be submitted to the Township for review and approval.

(3) When requested by appropriate officers or agents of the Township, the applicant shall also submit a visual-impact plan or sections that demonstrates appropriate steps taken to mitigate on-site and off-site glare and to retain the rural character of the Township (i.e., topographic information or burms).

(4) Postapproval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to the Township for review and approval.

(5) Plan verification shall be submitted to the Township after the final installation to demonstrate compliance. The plan shall show light levels below typical poles, between poles and also horizontal and vertical illuminance at the property line in fifty-foot increments. Vertical levels shall be taken five feet above finished grade. The plan shall note the date and time measurements were taken.

(6) Postinstallation inspection. The Township reserves the right to conduct a postinstallation nighttime inspection to verify compliance with the requirements of this chapter, and if appropriate, to require remedial action at no expense to the Township.

G. Compliance monitoring.

(1) Safety hazards.

(a) If appropriate officers or agents of the Township determine that a lighting installation created a safety or personal-security hazard, the person(s) responsible for the lighting shall be notified in writing and required to take remedial action.

(b) If appropriate corrective action has not been effected within 30 days of written notification, the Township may commence legal action as provided in §§ 170-1514I and J below.

(2) Nuisance glare and inadequate illumination levels.

(a) When appropriate officers or agents of the Township determine that an installation produces unacceptable levels of nuisance glare, skyward light, excessive or insufficient illumination levels or otherwise varies from this chapter, the Township may give written notification to the person(s) responsible for the lighting and require appropriate remedial action.

(b) If appropriate corrective action has not been effected within 30 days of written notification, the Township may commence legal action.

H. Nonconforming lighting. Any lighting fixture or lighting installation existing on the effective date of this chapter that does not conform with the requirements of this chapter shall be considered as a lawful nonconformance subject to the following:

(1) Unless minor corrective action is deemed by the Township to be an acceptable alternative, a nonconforming lighting fixture or lighting installation shall be made to conform with the applicable requirements of this chapter when:

(a) It is deemed by the Township to create a safety hazard;

(b) It is replaced, or relocated; or

(c) There is a change in use.

(2) Nonconforming lighting fixtures and lighting installations shall be made to conform with the requirements of this chapter or removed within two years after the effective date of this chapter.

I. Modifications.

(1) For any use or activity subject to subdivision or land development review, modification(s) to the provisions of this § 170-1514 may be requested, which modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of Chapter 149 of the Township Code.

(2) For any use or activity not subject to subdivision or land development review, where subject to application for approval of a conditional use, special exception, or zoning variance, modification(s) to the provisions of this section may be requested as part of such application.

(3) For any use or activity not otherwise subject to permit or approval as provided in Subsections I(1) or (2) above, modification(s) to the provisions of this section may be requested in the form of an application for grant of a special exception by the Zoning Hearing Board.

(4) In approving any application pursuant to Subsections I(2) or (3) above, the Zoning Hearing Board or Board of Supervisors, as applicable, as a condition of approval of such application, may permit specific modification(s) to the provisions of this section subject to the following:

(a) The Zoning Hearing Board or Board of Supervisors, as applicable, shall determine that the specific nature of the lawful use or activity, existing site conditions, and/or safety considerations warrant such modification(s); and

(b) Permitted modifications shall be consistent with the purposes of this section.