

**from Warwick Township, Chester County, Zoning Ordinance,
Amended April 7, 2008**

ARTICLE 27 -LIGHTING

SECTION 2700 - PURPOSE

- A. In addition to the general goals listed in the statements of Purpose, Section 102, and Community Development Objectives, Section 103, the purpose of the Lighting Provisions is to:
1. Provide for and control lighting in outdoor public places where public health, safety and welfare are potential concerns.
 2. Protect drivers and pedestrians from the glare of non-vehicular light sources.
 3. Protect neighbors, the environment and the night sky from nuisance glare and light trespass from improperly selected, placed, aimed, applied, maintained or shielded light sources.
 4. Promote energy efficient lighting design and operation.
 5. Protect and retain the intended visual character of the various Township venues.

SECTION 2701 - APPLICABILITY

- A. All uses within the Township where there is interior or exterior lighting that may create a nuisance or hazard as viewed from outside, including, but not limited to, residential, commercial, industrial, public and private recreational/sports and institutional uses, and sign, billboard, architectural and landscape lighting.
- B. Temporary seasonal decorative lighting and emergency lighting are exempt from all but the glare-control requirements of this Ordinance.
- C. Emergency lighting, as may be required by any public agency while engaged in the performance of their duties, is exempt from the requirements of this Ordinance.

SECTION 2702 - DESIGN CRITERIA

- A. Illumination Levels - Lighting where required by this Ordinance, or otherwise required or allowed by the Township, shall have intensities, uniformities and glare control in accordance with the recommended practices of the Illuminating Engineering Society of North America (IESNA), unless otherwise directed by the Board of Supervisors.

B. Lighting Fixture Design

1. Fixtures shall be of a type and design appropriate to the lighting application and shall be aesthetically acceptable to the Township.
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, fixtures shall be aimed straight down and shall meet IESNA full-cutoff criteria. Fixtures, except those containing directional lamps, 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. In the case of decorative street lighting, the Township may approve the use of luminaires that are fully shielded or comply with IESNA cutoff criteria.
3. For the lighting of predominantly non-horizontal surfaces such as, but not limited to, facades, landscaping, signs, billboards, fountains, displays and statuary, fixtures shall be fully 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. Fixtures, except those containing directional lamps, 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.

C. Control of Glare

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 fixtures such as floodlights and spotlights shall be so shielded, installed and aimed that they do not project their output into the windows of neighboring residences, adjacent uses, past the object being illuminated, skyward or onto a public roadway or pedestrian way. Floodlights, when

building, pole or otherwise installed above grade on residential properties, except when motion-sensor actuated, 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 re-aimed and/or fitted with a shielding device to block the view of the glare source from that property.

3. "Barn lights," aka "dusk-to-dawn lights," when a source of glare as viewed from an adjacent property, shall not be permitted unless effectively shielded as viewed from that property.
4. Parking facility and vehicular and pedestrian-way lighting (except for safety and security applications and all-night business operations), for commercial, industrial and institutional uses shall be automatically extinguished no later than one-half hour after the close of business or facility operation. When safety or security lighting is proposed for after-hours illumination, it shall not be in excess of twenty-five (25) percent of the number of fixtures or illumination level required or permitted for illumination during normal hours.
5. 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 for a commercial establishment may be operated while the establishment is actually open for business, and until one-half hour after closing.
6. 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.
7. The illumination projected from any use onto a residential use shall at no time exceed 0.1 foot-candle, measured line-of-sight from any point on the receiving residential property.
8. The illumination projected from any property onto a non-residential use shall at no time exceed 1.0 foot-candle, measured line-of-sight from any point on the receiving property.
9. The illumination projected from any property onto a public street shall at no time exceed 1.0 foot-candle, measured line-of-sight from any point within the

right-of way.

10. Except as permitted for certain recreational lighting and permitted elsewhere in this paragraph, fixtures shall not be mounted in excess of twenty (20) feet above finished grade of the surface being illuminated. 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 Township may, at its sole discretion, and based on proposed mitigation of potential off-site impacts, allow a fixture mounting height not to exceed 25' AFG. For recreational lighting maximum mounting height requirements, refer to "Recreational Uses" elsewhere in the Ordinance.
11. Only the United States and Pennsylvania state flags may be illuminated past 11:00 p.m. Flag lighting sources shall not exceed 7,000 aggregate lamp lumens per flagpole. The light source shall have a beam spread no greater than necessary to illuminate the flag and shall be shielded so that it is not visible at normal viewing angles.
12. 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 fixtures aimed straight down and shielded in such a manner that the lowest opaque edge of the fixture shall be below the light source at all lateral angles. The average illumination in the area directly below the canopy shall not exceed 20 initial foot-candles and the maximum shall not exceed 30 initial foot-candles.

SECTION 2703 - INSTALLATION REQUIREMENTS

- A. Electrical feeds for lighting standards shall be run underground, not overhead.
- B. Poles supporting lighting fixtures for the illumination of parking areas and located directly behind parking spaces, or where they could be hit by snow plows or wide-swinging vehicles, shall be 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 protected by other Township-approved means.
- C. Pole mounted fixtures for lighting horizontal tasks shall be aimed straight down and poles shall be plumb.
- D. Poles and brackets for supporting lighting fixtures shall be those specifically manufactured for that purpose and shall be designed and rated for the weights and wind loads

involved.

- E. Pole foundations shall be designed consistent with the wind loads and local soil conditions involved.

SECTION 2704 - MAINTENANCE

- A. Lighting fixtures and ancillary equipment shall be maintained so as to always meet the requirements of this Ordinance.

SECTION 2705 - BILLBOARDS AND SIGNS

- A. The lighting of new or relighting of existing billboards and signs shall require a Building Permit, which shall be granted when the Township is satisfied that excessive illumination, light pollution, glare and light trespass have been adequately mitigated, and shall be subject to the following requirements:
 - 1. Externally illuminated billboards and signs shall have fixtures mounted at the top of the billboard or sign and aimed downward. The fixtures shall be designed, fitted and aimed to shield the source from off-site view and to place the light output onto and not beyond the sign or billboard. Lighting shall be by linear fluorescent fixture unless it can be demonstrated to the satisfaction of the Township that such a mounting arrangement is not possible. At no point on the face of the sign or billboard and at no time shall the illumination exceed 30-vertical foot-candles during hours of darkness.
 - 2. Internally illuminated signs shall have a dark field and light message. The aggregate output of the light sources shall not exceed 500 initial lumens per square foot of sign face per side.
 - 3. The illumination of billboards shall be limited to industrial zoning districts and the illumination of billboards within 400' of a residential use or district shall not be permitted.
 - 4. Off-premises billboards and signs shall be extinguished automatically by a programmable controller, with astronomical and daylight savings time control and spring or battery power-outage reset, by no later than 11:00 each evening until dawn, except that signs for establishments (not companies) that operate or remain open past 11:00 p.m. may remain on no later than ½ hour past the close of the establishment.
 - 5. Rotating, traveling, pulsing, flashing or oscillating light sources, lasers, beacons, searchlights or strobe lighting shall not be permitted.

6. LED sign lighting shall only be permitted in commercial and industrial districts, and LED billboard lighting shall only be permitted in industrial districts. Such lighting shall be static and shall not be allowed to operate between 11:00 p.m. and dawn when located where visible from a residential district or use. Except for time and weather signs, the message shall not be permitted to change more than once in each 24-hour period. The LED output shall be automatically reduced to a brightness level that does not create glare during hours of darkness.
7. The use of highly reflective signage that creates nuisance glare or a safety hazard shall not be permitted.

SECTION 2706 - RESIDENTIAL DEVELOPMENT FIXTURE PLACEMENT

- A. For residential developments where lot sizes are less than 21,780 square feet, street lighting shall be provided at:
 1. The intersection of public roads with entrance roads to the proposed development.
 2. Intersections involving proposed public or non-public major-thoroughfare roads within the proposed development.
 3. The apex of the curve of any major-thoroughfare road, public or non-public, within the proposed development, having a radius of 300 feet or less.
 4. Cul-de-sac bulbs.
 5. Terminal ends of center median islands having concrete structure curbing, trees and/or other fixed objects not having breakaway design for speeds of 25 m.p.h. or greater.
 6. Defined pedestrian crossings located within the development.
 7. At other locations along the street as deemed necessary by the Township.
- B. Where lot sizes permit the parking of fewer than three (3) vehicles on the residential lot, thereby necessitating on-street parking, street lighting may be required along the length of the street.
- C. In multi-family developments, common parking areas of 4 spaces or greater shall be illuminated.
- D. In residential developments with lots of less than 21,780 square feet, where five (5) or more common contiguous

parking spaces are proposed, such spaces shall be illuminated.

SECTION 2707 - RECREATIONAL USES

A. The nighttime illumination of outdoor recreational facilities for such sports as baseball, basketball, soccer, tennis, track and field, and football typically necessitate higher than normally allowed fixture mounting heights and aiming angles, utilize very high-wattage lamps and potentially produce unacceptable levels of light trespass and glare when located near residential properties. Permission to illuminate such facilities shall be granted only when the Township is satisfied that the health, safety and welfare rights of nearby property owners and the Township as a whole have been properly protected. When the Township permits recreational uses during hours of darkness, the following requirements shall apply:

1. Race tracks and such recreational venues as golf driving ranges and trap-shooting facilities that necessitate the horizontal or near horizontal projection of illumination, shall not be permitted to be artificially illuminated.
2. Recreational facilities for basketball, baseball, football, soccer, miniature golf, tennis or track shall not be illuminated if located within 1,000 feet of a property containing a residential use.
3. Sporting events shall be timed to end at such time that all lighting in the sports facility, other than lighting for safe exit of patrons, shall be extinguished by ten (10:00) p.m., regardless of such occurrences as extra innings or overtimes.
4. Maximum mounting heights for recreational lighting shall be in accordance with the following:
 - a. Basketball 20'
 - b. Football 70'
 - c. Soccer 70'
 - d. Baseball/Softball
60' Diamond 60'
90' Diamond 70'
 - e. Miniature Golf 20'
 - f. Swimming Pool 20'
 - g. Tennis 20'
 - h. Track 20'

5. To assist the Township in determining whether lighting will be permitted, applications for illuminating recreational facilities shall be accompanied by a visual impact plan that contains the following:
 - a. Plan views containing a layout of the recreational facility and showing pole locations and the location of residences on adjoining properties.
 - b. Elevations containing pole and fixture mounting heights, horizontal and vertical aiming angles and fixture arrays for each pole location.
 - c. Elevations containing initial vertical illuminance plots at the boundary of the site, taken at a height of 5' line-of-sight.
 - d. Elevations containing initial vertical illuminance plots on the windowed facades of all residences facing and adjacent to the recreational facility. Such plots shall demonstrate compliance with the light trespass and glare control requirements of this Ordinance.
 - e. Proposed frequency of use of the facility during hours of darkness on a month-by-month basis and proposed time when the sports lighting will be extinguished.
 - f. A narrative describing the measures proposed to achieve minimum off-site disturbance.

SECTION 2708 - PLAN SUBMISSION REQUIREMENTS

- A. Where site lighting is required by this Ordinance, is otherwise required by the Township or is proposed by Applicant, lighting plans shall be submitted for review and approval for Subdivision & Land Development, Conditional Use, Variance, Building Permit and Special Exception applications. The submitted information shall include the following:
 1. A plan of the site, complete with all structures, parking spaces, building entrances, traffic areas (both vehicular and pedestrian), existing and proposed trees, and adjacent uses that might be adversely impacted by the lighting. The lighting plan shall contain a layout of all proposed and existing fixtures, including but not limited to area, architectural, building entrance, canopy, soffit, landscape, flag, sign, etc., by location, orientation, aiming direction, mounting height and type.

2. A 10'x10' illuminance grid (point-by-point) plot of maintained horizontal foot-candles overlaid on the site plan, plotted out to 0.0 foot-candles, which demonstrates compliance with the light trespass, illuminance and uniformity requirements as set forth in this Ordinance or as otherwise required by the Township. When the scale of the plan, as judged by the Township, makes a 10'x10' grid plot illegible, a larger grid spacing may be permitted.
3. The maintenance (light-loss) factors, IES candela test-filename, initial lamp-lumen ratings and specific lamp manufacturer's lamp ordering nomenclature, used in calculating the presented illuminance levels.
4. Description of the proposed equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, on/off control devices, mounting heights, pole foundation details, pole protection means and mounting methods.
5. When landscaping plans are involved, they shall contain the 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.
6. When requested by the Township, the Applicant shall also submit a visual-impact plan that demonstrates appropriate steps have been taken to mitigate the potential consequences of on-site and off-site glare and to retain the intended character of the Township. This plan may require the inclusion of initial vertical foot-candle values at specific off-site venues, e.g., bedroom windows of adjacent residential uses.
7. Plan Notes - The following notes shall appear on the Lighting Plan:
 - a. Post-approval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to the Township for review and approval. Requests for substitutions shall be accompanied by catalog cuts of the proposed equipment and lighting plans as required above that demonstrate full compliance with the Township-approved plan.
 - b. The Township reserves the right to conduct post-installation inspections to verify compliance with the Ordinance requirements and approved Lighting Plan commitments, and to require remedial action at no expense to the Township.

- c. All exterior lighting, including building-mounted lighting, shall meet IESNA full-cutoff criteria unless otherwise specifically approved by the Township.
- d. The installer shall notify the Township to arrange for inspection and approval of all exterior lighting, including building-mounted lighting, prior to its installation.

SECTION 2709 - COMPLIANCE MONITORING

A. Safety Hazards

1. If the Township judges a lighting installation creates a safety hazard, the person(s) responsible for the lighting shall be notified and required to take remedial action.
2. If appropriate corrective action has not been effected within fifteen (15) days of notification, the Township may take appropriate legal action.

B. Nuisance Glare and Inadequate Illumination Levels

1. When the Township judges an installation produces unacceptable levels of nuisance glare, skyward light, excessive or insufficient illumination levels or otherwise varies from this Ordinance, the Township may cause notification of the person(s) responsible for the lighting and require appropriate remedial action.
2. If the infraction so warrants, the Township may take appropriate legal action.

SECTION 2710 - NONCONFORMING LIGHTING

A. Any lighting fixture or lighting installation existing on the effective date of this Ordinance that does not conform with the requirements of this Ordinance, shall be considered as a lawful nonconformance.

1. A nonconforming lighting fixture or lighting installation shall be made to conform with the requirements of this Ordinance when:
 - a. Minor corrective action, such as re-aiming or shielding can achieve conformity with the applicable requirements of this Ordinance.
 - b. It is deemed by the Township to create a safety hazard.
 - c. It is replaced by another fixture or fixtures or abandoned or relocated.

- d. The number of fixtures on site is increased by 50% or more.
 - e. There is a change in use.
2. Regardless of the requirements of Section A.1. above, nonconforming lighting fixtures and lighting installations shall be made to conform with the requirements of this Ordinance or removed within five (5) years from the effective date of this Ordinance.