

LONDON GROVE TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ORDINANCE NO.95A

AN ORDINANCE TO AMEND THE LONDON GROVE TOWNSHIP SUBDIVISION
AND LAND DEVELOPMENT ORDINANCE OF 1990, AS AMENDED, TO
PROVIDE OUTDOOR LIGHTING STANDARDS.

Section 614 OUTDOOR LIGHTING

A. Purpose

1. 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 issues.
 - 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 poorly shielded, aimed, placed, applied or maintained light sources.
 - d. Promote energy efficient lighting design and operation.
 - e. Protect and retain the intended character of London Grove Township.

B. Applicability

1. For uses that are proposed to operate during hours of darkness where there is public assembly and/or traverse, including but not limited to the following: commercial, industrial, public-recreational, institutional, multi-family residential developments, and single family developments with lot sizes of 20,000 square feet or less, where on-street parking is permitted and where cartway widths are 20' or less.
2. The Township may require that lighting be incorporated for other uses or locations or may restrict or deny lighting in any of the above uses, as deemed necessary.
3. The glare-control requirements herein contained apply to lighting in all above-mentioned uses as well as, but not limited to, sign, architectural, landscape, recreational and residential lighting.
4. Temporary decorative/seasonal lighting is exempt from all but the glare control requirements of this Ordinance.

C. Definitions

1. Footcandle – A unit of incident light quantity measurable with an illuminance meter, a.k.a. footcandle meter or light meter.
2. Full Cutoff - A term that describes a lighting fixture from which no light is emitted at or above a horizontal plane through the bottom of light-emitting aperture portion of the fixture and no more than 10% of the lamp's intensity is emitted at any angle within 10 degrees below that horizontal plane, at all lateral angles around the fixture.
3. Glare – The sensation produced by excessive direct or reflected light that causes annoyance, discomfort or loss in visual performance of the eye. Sensitivity to glare increases with the viewer's age.
4. Illuminance – The quantity of incident light measured with a light meter in footcandles.
5. Light Trespass – Light, measured in footcandles, projected beyond the boundaries of the property on which the installation is sited.
6. Lumen – In the context of this ordinance, the published light-output rating of a lamp

D. Lighting Criteria

1. Illumination Levels

- a. Lighting, where required or permitted by this Ordinance or as otherwise required by the Township, shall have intensities and uniformity ratios in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IESNA) as contained in the IESNA Lighting Handbook or separately in IESNA Recommended Practices or Design Guides.
- b. Future amendments to said above-referenced IESNA recommended practices shall become a part of this Ordinance without further action of the Township.
- c. Examples of intensities for typical outdoor applications, as extracted from the IESNA Lighting Handbook, are presented below but are not intended to be all-inclusive.

Use/Task	Maintained Footcandles	Uniformity Ratio
(a) Streets, local commercial Streets, residential, when required by the Township	0.9 Avg. 0.4 Avg.	6:1 Avg:Min 6:1 Avg:Min
(b) Parking, multi-family residential, • Low vehicular/pedestrian activity • Medium vehicular/pedestrian activity	0.2 Min. 0.6 Min.	4:1 Avg:Min* 4:1 Avg:Min*
(c) Parking, industrial/commercial/institutional/recreational • High activity, e.g., regional shopping centers/fast food facilities, major athletic/civic/cultural events. • Medium activity, e.g. community shopping centers, office parks, hospitals, commuter lots, cultural/civic/recreational events • Low activity, e.g., neighborhood shopping, industrial employee parking, schools, church parking	0.9 Min. 0.6 Min. 0.2 Min.	4:1 Avg:Min* 4:1 Avg:Min* 4:1 Avg:Min*
(d) Sidewalks • Commercial • Residential	1.0 Avg. 0.5 Avg.	5:1 Avg:Min 5:1 Avg:Min
(e) Building entrances, commercial, industrial, institutional per L&I	5.0 Avg.	-
(f) Service Station Pump Islands	10.0 Avg. ⁴	4:1 Avg:Min
(g) Car Dealerships front row/other sales areas	20/10 Max.	5:1 Max :Min

- Notes: 1. Illumination levels are maintained horizontal footcandles on the task, e.g., pavement or area surface.
2. Uniformity ratios dictate that average illuminance values shall not exceed minimum values by more than the product of the minimum value and the specified ratio. E.g., for high activity commercial parking, the average illuminance shall not exceed 3.6 footcandles (0.9 x 4).
* In no case shall the maximum to minimum uniformity ratio for parking be in excess of 20:1
3. This tabulation is not intended to be inclusive of all permitted uses/tasks within the Township, nor does the fact that a use/task is listed mean that the use/task is permitted nor that lighting for that use/task is permitted.
4. The Township, at its discretion, may permit the average to be increased to 20 footcandles, when the intensities at existing adjacent commercial uses so justifies.

2. Lighting Fixture Design

- a. Fixtures shall be of a type and design appropriate to the lighting application and aesthetically acceptable to the Township.
- b. For the lighting of predominantly horizontal surfaces such as, but not limited to, roadways, areas of vehicular and pedestrian passage, merchandising and storage areas, automotive-fuel dispensing facilities, automotive sales areas, loading docks, cul-de-sacs, active and passive recreational areas, building entrances, sidewalks, paths, site entrances and parking areas, fixtures shall be aimed straight down and shall meet IESNA full-cutoff criteria. Any fixture whose aggregate wattage does not exceed the output of a standard 40-watt incandescent lamp, e.g., 500 lumens, shall be exempt from this requirement.
- c. For the lighting of predominantly non-horizontal surfaces such as, but not limited to, facades, landscaping, signs, fountains, displays, flags and statuary, where the use of fixtures meeting IESNA full-cutoff criteria is not practical or possible, fixtures shall be equipped with aiming and/or light-redirecting devices such as shields, visors, baffles, skirts or hoods when necessary to direct or redirect offending light distribution.

- d. The use of floodlighting, spotlighting, non-cutoff wall-mounted fixtures, internally illuminated decorative globes and spheres, lanterns and other fixtures not meeting IESNA full-cutoff criteria shall be permitted only with the approval of the Township, based upon acceptable justification and achievement of suitable glare control. Any fixture whose aggregate wattage does not exceed the output of a standard 40-watt incandescent lamp, e.g., 500 lumens, shall be exempt from this requirement.
- e. NEMA-head fixtures, a.k.a. “barn lights” or “dusk-to-dawn lights,” shall not be permitted where they create nuisance glare as seen from other uses or roadways, unless fitted with a reflector or shield to render them full cutoff.

3. Control of Nuisance and Disabling Glare

- a. All outdoor lighting, whether or not required or permitted by this ordinance, 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. The use of floodlights, spotlights and omni-directional fixtures, except for residential applications, shall require approval by the Township. All such fixtures, regardless of whether for residential or non-residential applications, shall be so installed and aimed that they do not project their output into the windows of neighboring residences, adjacent uses, skyward or onto a public roadway or pedestrian way.
- c. Lighting for commercial, industrial, public recreational and institutional uses, including but not limited to lighting for parking areas, roadways, pathways, facades, signs and landscaping, shall be extinguished by automatic means within ½ hour after the close of business. Where after-hours lighting is deemed reasonably necessary for safety and/or security, the intensity of such lighting shall not exceed 33% of the intensities permitted by this ordinance during normal business hours.
- d. Only the United States and state flags, and no others, shall be permitted to be illuminated from dusk till dawn and such flags shall be illuminated by a single source with a beam spread and aiming angle no greater than necessary to illuminate the flags. Flag lighting sources shall not exceed 10,000 lumens per flagpole.
- e. 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 placement.
- f. In no case shall the illumination cast by a source or sources onto an adjacent residential property exceed 0.1 *vertical* footcandle measured line-of-sight, from any point on the adjacent residential property.
- g. Externally illuminated signs and billboards shall be lighted by fixtures mounted at the top of the sign or billboard and aimed downward. Such lighting, when off-premises, shall be automatically extinguished between the hours of 10 p.m. and dawn.
- h. Directional fixtures, e.g., floodlights or spotlights, for such applications as façade, fountain, feature, sign, billboard, recreational and landscape illumination, when specifically approved by the Township for use, shall be aimed so as not to project their output beyond the objects intended to be illuminated.
- i. Canopy lighting, for such applications as gas/service stations, bank and fast-food drive-throughs, 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.

4. Installation

- a. Electrical feeds for fixtures mounted on poles shall be run underground, not overhead.

- b. Poles supporting lighting fixtures for the illumination of parking areas and located directly behind parking spaces, shall be placed a minimum of five (5) feet outside paved area, curbing or tire stops, or on concrete pedestals at least thirty (30) inches high above the pavement, or suitably protected by other approved means.
- c. Except as specifically approved by the Township, e.g., for recreational lighting, fixtures meeting IESNA full-cutoff criteria shall not be mounted in excess of twenty (20) feet above the finished grade of the area being illuminated.
- d. Except as specifically approved by the Township, e.g., for recreational lighting, fixtures not meeting IESNA “full-cutoff” criteria, when their use is specifically approved by the Township, shall not be mounted in excess of sixteen (16) feet above grade.

E. Street and Parking Lot Lighting for Residential Applications

- 1. For residential developments where lot sizes are or average 20,000 square feet or less, on-street parking is permitted and cartways are 20’ wide or less, street lighting, when required or allowed by the Township, shall be lighted in accordance with the illuminance requirements contained in Section D.1.a.(a) above and 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 and cul-de-sac islands having concrete structure curbing, trees, signs or other fixed objects
 - e. At defined pedestrian crossings located within the development
 - f. At cartway curves with radii of less than 300’
 - g. Along the length of any street where lot sizes permit the parking of less than three (3) vehicles on the lot and thereby necessitate on-street parking
 - h. In off-street parking areas where five (5) or more contiguous parking spaces are proposed for common use
- 2. In multi-family developments, common parking areas shall be illuminated in accordance with the illuminance requirements contained in Section D.1.c.(b) above.

F. Recreational Lighting

- 1. When facilities for such outdoor recreational activities as baseball, basketball, soccer, tennis, football and miniature golf are specifically permitted by the Township for operation during hours of darkness, the following requirements shall apply:
 - a. Lighting shall be accomplished through the use of fixtures conforming to IESNA full-cutoff criteria. The Township may consider the use of fixtures that are not full-cutoff compliant only when it can be demonstrated to the satisfaction of the Township that acceptable control of glare and light trespass will be achieved, taking into consideration the proximity of the facility to adjacent uses that could be adversely impacted. Such a proposal shall be accompanied by a visual impact plan as described in Section G.2. below.
 - b. 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 10:00 p.m., regardless of such occurrences as extra innings or overtimes.
 - c. Golf driving ranges and trap shooting facilities and other sports requiring that the light be projected out at a horizontal or near horizontal angle shall not be lighted.
 - d. The following outdoor recreational facilities shall not be illuminated if located within any residential district or sited on a nonresidential property located within 1200 feet of a residential use: basketball, baseball, football, soccer, miniature golf, tennis, track.

e. Maximum mounting heights for outdoor recreational lighting shall be in accordance with the following:

(1)	Basketball	20'
(2)	Football	70'
(3)	Soccer	70'
(4)	Little League Baseball	
	(a) 200' Radius	60'
	(b) 300' Radius	70'
(5)	Miniature Golf	20'
(6)	Tennis	20'
(7)	Track	20'

G. 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 with any preliminary or final subdivision/land-development plan application and with any conditional use application, where requested, and shall include:

- a. A plan or plans of the site, 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, and a layout of all proposed fixtures by location, mounting height and type. The submittal shall include in addition to proposed area lighting, exterior architectural lighting, building-entrance lighting, landscape lighting, sign lighting, etc.
- b. 10' x 10' illuminance-grid (point-by-point) plot of maintained footcandles, plotted out to 0.0 footcandles, which demonstrates compliance with the light trespass, intensity and uniformity requirements as set forth in this Ordinance or as otherwise required by the Township. The lamp lumen rating and type, maintenance (light-loss) factors and IES file names used in calculating the illuminance levels shall be documented on the plan.
- 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.
- d. 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.”

2. When requested by the Township, applicant shall also submit a visual-impact plan that demonstrates appropriate steps have been taken to mitigate on-site and off-site glare and light trespass and to retain the Township's intended character.

H. Plan Notes – The following notes shall appear on the lighting plans:

- 1. Post-approval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to the Township for review and approval.
- 2. The Township reserves the right to conduct a post-installation nighttime inspection to verify compliance with the requirements of this Ordinance and as otherwise agreed upon by the Township, and if appropriate, to require remedial action at no expense to the Township.