

**Exeter Township
Ordinance No.612
Outdoor Lighting**

AN ORDINANCE OF EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA TO BE KNOWN AS THE EXETER TOWNSHIP OUTDOOR LIGHTING ORDINANCE OF 2006, SETTING FORTH CONTROLS FOR OUTDOOR LIGHTING.

BE IN ENACTED AND ORDAINED by the Board of Supervisors of Exeter Township, Berks County, Pennsylvania, that pursuant to the authority set forth in the Pennsylvania Second Class Township Code, as amended, hereby enact and ordain the following:

SECTION 1. TITLE.

An Ordinance establishing regulations, specifications and restrictions for the use and/or installation of outdoor lighting in the Township of Exeter, Berks County, Pennsylvania.

SECTION 2. SHORT TITLE

This Ordinance shall be known as, and may be cited as the “Exeter Township Outdoor Lighting Ordinance of 2005, as amended”.

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 Exeter Township

SECTION 4. APPLICABILITY

- A. Uses that are proposed to operate during hours of darkness where there is public assembly and traverse, including but not limited to the following: residential, multi-family residential, commercial, industrial, institutional, public recreational/sports, and sign, architectural and landscape lighting.
- B. The Board of Supervisors may, in its sole discretion, require the illumination of residential subdivisions in accordance with Section 6.G below.
- C. The Board of Supervisors 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.

SECTION 5. DEFINITIONS

- A. 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.
- B. 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.
- C. 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.
- D. 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 below the 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.
- E. Glare – The sensation produced by lighting that causes an annoyance, discomfort or loss in visual performance and visibility to the eye.
- F. Illuminance – The quantity of incident light measured in footcandles.

- G. Light Trespass – Light emitted by a lighting installation, which extends beyond the boundaries of the property on which the installation is sited.
- H. Lumen – The light-output rating of a lamp (light bulb), as used in the context of this Ordinance.
- I. Luminaire – A complete lighting unit

SECTION 6. LIGHTING CRITERIA

A. Illumination Levels

- 1. Lighting, where required by this Ordinance or otherwise required by the Board of Supervisors, 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 and relevant IESNA 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 Township.
- 3. Examples of intensities for typical outdoor applications, as extracted from the Lighting Handbook, are presented below but are not intended to be all-inclusive nor are the listed uses deemed to be permitted uses within the Township.

Use/Task	Maintained Footcandles	Uniformity
(a) Streets, local commercial	0.9 Avg.	6:1 Avg:Min
Streets, residential (when lighting is required by Board of Supervisors)	0.4 Avg.	6:1 Avg:Min
(b) Parking, multi-family residential,	0.8 Avg..	4:1 Avg:Min
(c) Parking, industrial/commercial/institutional/municipal		
• High activity, e.g., regional shopping centers/fast food facilities, major athletic/civic/cultural events.	0.9 Min	4:1 Avg:Min
• Medium activity, e.g. community shopping centers, office parks, hospitals, commuter lots, cultural/civic/recreational events	0.6 Min	4:1 Avg:Min
• Low activity, e.g., neighborhood shopping, industrial employee parking, schools, church parking.	0.2 Min	4:1 Avg:Min
(d) Service station pump islands	20 Avg./30 Max	4:1 Avg:Min
(e) Car dealerships front row/other sales areas	20 Avg./30 Max	5:1Max:Min
(d) Sidewalks (when lighting is required by Board of Supervisors)	0.5 Avg.	5:1 Avg:Min
(e) Building entrances, commercial, industrial, institutional	5.0 Avg.	-

- 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 commercial parking high activity, the average footcandles shall not be in excess of 3.6 (0.9 x 4).
3. In no case shall the maximum to minimum uniformity ratio for parking exceed 20:1 max. to min.

B. Lighting Fixture Design

- 1. Fixtures shall be of a type and design appropriate to the lighting application and aesthetically acceptable to the Township. Street lighting supplied with unmetered electric service shall meet the specifications of the electric utility.
- 2. 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 be full cutoff or fully shielded, unless the aggregate wattage per-fixture does not exceed the output of a standard non-directional 60-watt incandescent lamp, i.e., 900 lumens, in which case non-cutoff fixtures shall be permitted.
- 3. For the lighting of non-horizontal surfaces such as, but not limited to, facades, landscaping, signs, fountains, displays, flags and statuary, the use of lighting fixtures that are not full cutoff or fully

shielded, shall be permitted only with the approval of the Board of Supervisors, based upon acceptable shielding and other glare control (approval shall not be required if the aggregate wattage per fixture does not exceed the output of a standard non-directional 60-watt incandescent lamp, i.e., 900 lumens).

4. "Barn lights," aka "dusk-to-dawn lights," shall not be permitted where they are visible from other uses unless fitted with a reflector or other device to render them fully shielded or full cutoff.

C. Lighting Pole & Bracket Design

1. Lighting poles, brackets and mounting accessories shall be of a type and design appropriate to the application and shall be specifically manufactured and intended for use only as lighting poles, pole brackets and mounting accessories.
2. Poles fabricated from pipe or conduit (of any type or material), stock lumber or fencing supports shall not be allowed except as permitted by the Board of Supervisors when mounted at a height not exceeding 10' AFG on fences for commercial or industrial security lighting.
3. Lighting poles shall be specifically designed and rated for the weight and wind loads of the luminaires, brackets and attachments intended to be mounted thereon.
4. In order to minimize the instances of secondary brightness, the Township may require that poles supporting fixtures of 250 watts or greater shall have a dark finish (less than 35% reflectivity).

D. Control of Nuisance and Disabling Glare (Excessive Brightness in the Field of View)

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. Floodlights and spotlights that are not full-cutoff or fully shielded, where specifically approved by the Township, shall be so 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.
3. Unless otherwise permitted by the Board of Supervisors, e.g., for safety or security or all-night commercial/industrial operations, lighting for commercial, industrial, public recreational and institutional applications shall be controlled by programmable timers that accommodate seasonal and annual variations and battery or mechanical (e.g., spring-wound) backup, to permit extinguishing sources between 11 p.m. and dawn or within 1 hour of the close of business, whichever is earlier, to conserve energy and to mitigate nuisance glare and sky-lighting consequences.
4. Security lighting proposed for use after 11 p.m. or after the normal hours of operation for commercial, industrial, institutional or municipal applications, shall be accomplished using no more than 25% of the number of fixtures used during normal business hours, from then until the start of business in the morning. Alternatively, where reduced but continued activity requires even illumination, the use of dimming circuitry to reduce illumination levels by 50% after 11:00 p.m. or after normal business hours, 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 the property line. 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.
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 Township'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 15,000 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. Canopy lighting, for such applications as gas/service stations, bank, drugstore and fast-food drive-thru, 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 level with or below the light source.
11. Temporary residential holiday lighting is exempt from the requirements of this Section except as it creates a hazard or nuisance.

E. Agricultural Use Criteria

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

F. Recreational Uses

1. When facilities for such outdoor recreational activities as baseball, tennis, football, miniature golf or any other recreational use permitted under the Exeter Township Zoning Ordinance, are specifically permitted by the Board of Supervisors for operation during hours of darkness, the following requirements shall apply:
 - a. Lighting shall be accomplished only through the use of fixtures conforming to IESNA full-cutoff criteria, or as otherwise approved by the Board of Supervisors based on suitable control of glare and light trespass.
 - b. For new recreational facilities and 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'

G. 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 six (6) 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.

H. 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. 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.
5. The lamp rating for internally illuminated signs shall not exceed 1000 initial lumens per square foot of sign.
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 light sources for signage shall be permitted only in commercial districts, shall be static and shall not be allowed to operate past 11:00 p.m. when located where visible from a residential district or use.
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 Township is satisfied that excessive illumination, 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 point-by-point plot of initial vertical illuminance on the sign or billboard face, catalog cuts of proposed fixtures and any glare reduction devices and a description of lamps, mounting locations, aiming angles and proposed hours of operation and method for automatically extinguishing the lighting by the required hour.

I. Installation

1. Electrical feeds for pole-mounted fixtures shall be run underground, not overhead.
2. 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, shall be placed a minimum of five (5) feet outside paved area or tire stops, or on concrete pedestals at least thirty (30) inches high above the pavement, or suitably protected by bollards or other approved means.
3. Pole-mounted fixtures shall be aimed straight down.
4. Mounting Heights - The following maximum fixture mounting heights shall prevail:
 - a. Full-cutoff fixtures with 400-watt lamps maximum, in parking lots: 20' AFG
 - b. Full-cutoff fixtures with 1000-watt lamps maximum, shall be permitted only in large (100 spaces or more) commercial, institutional and industrial parking lots except when the facility is adjacent to a residential district or use or an environmentally sensitive area: not less than 25' or more than 30' AFG. Mounting heights of 25' – 30' shall not be permitted when located less than 100' from a residential district or use.
 - c. Decorative –cutoff or fully shielded fixtures with 175-watt lamps maximum, 16' AFG
 - d. Fully-shielded bollard fixtures with 100-watt lamps maximum, 42" AFG
 - e. Recreational Uses – See Section 6.F.
5. Electrical installation of street lighting shall be in accordance with prevailing regulations and specifications established by the serving electric utility. It shall be the responsibility of the installing contractor or his agent to have final construction inspected by an electrical inspection agency and a written report attesting to this fact submitted to the utility, thereby allowing the utility to provide pole illumination.
6. Pole foundations shall be designed by a structural or civil engineer taking into account luminaire projected areas, wind loading and local soil conditions.

J. Post-Installation Inspection

1. The Township 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 Township.

SECTION 7. PLAN SUBMISSION

- A. For subdivision and land-development applications where site lighting is required by this Ordinance or the Board of Supervisors, 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. The Township 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 Township.
 3. The lamp lumen ratings and types, 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 Board of Supervisors, 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 approved lighting equipment shall be submitted to the Township for review and approval.
 2. The Township 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 Township, and if appropriate, to require remedial action at no expense to the Township.
 3. Installer shall notify Exeter Township Zoning Officer to arrange for inspection and approval of all exterior lighting equipment, including building-mounted lighting, prior to its installation.

SECTION 8. COMPLIANCE MONITORING

- A. Safety Hazards
1. If appropriate officers or agents of the Township 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 Township 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 Township judge an installation produces unacceptable levels of nuisance glare, skyward light, excessive or insufficient illumination levels or otherwise varies from this Ordinance, Township 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 Township 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 an 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 Township 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 Township 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 Township before a District Justice, pay a fine of not more than \$500, plus all court costs including reasonable attorney’s fees, incurred by the Township 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 Township 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 Township 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 Township by either seeking mitigation of nuisance or appropriate equitable or legal relief from a court of competent jurisdiction.

SECTION 12. EFFECTIVE DATE.

This Ordinance shall take effect five days after adoption by the Board of Supervisors.

ENACTED this 23rd day of January, 2006.

EXETER TOWNSHIP BOARD OF SUPERVISORS

Attest:

-----, Secretary