

Cooke Township Ordinance 2001-1

Cooke Township Outdoor Lighting Ordinance

Section 1 General Provisions

A. Title

This Ordinance shall be known, and may be cited, as the "Cooke Township Outdoor Lighting Ordinance."

B. Purposes

This Ordinance is enacted for the following purposes:

- (1). To establish requirements for outdoor lighting installations which promote public safety and welfare during the nighttime while minimizing the adverse effects of glare and light trespass often associated with outdoor lighting;
- (2). To protect the privacy of property owners by limiting the potential for glare and light trespass from outdoor lighting installations located on adjacent properties and roadways;
- (3). To prohibit outdoor lighting installations which are of excessive intensity and/or are deficient of photometric control such that the resulting glare and light trespass create a nuisance to pedestrians, cyclists, or motorists on neighboring properties and roadways;
- (4). To set forth outdoor lighting requirements which are consistent with lighting industry standards and practices, available technologies, and the lighting sciences.

C. Applicability

The requirements of this Ordinance shall apply to all outdoor lighting installations as follows:

- (1). Outdoor lighting installations which are newly designed, constructed, erected, or otherwise placed into operation after the effective date of this Ordinance;
- (2). Alterations, rehabilitations, or renovations to existing outdoor lighting installations, which are commenced with after the effective date of this Ordinance, and which involve the complete replacement of an existing lighting system with a new lighting system.

D. Non-Applicability

The requirements of this Ordinance shall not apply to, nor be retroactive to, existing outdoor lighting installations which began operation before the effective date of this Ordinance. Routine maintenance of said existing outdoor lighting installations shall not be required to comply with the requirements of this Ordinance. Routine maintenance activities include the following:

- (1). Replacement of lamps that are burned-out or inoperative.
- (2). Replacement/repair of damaged or inoperative luminaire components such as ballasts, ignitors, lenses, reflectors, refractors, sockets, or photocell controls.

E. Exemptions

The requirements of this Ordinance shall not apply where superseded by County, State, or Federal law.

- (1). **Temporary Emergency Lighting.** All temporary emergency lighting needed by the Police or Fire Departments or other emergency services, as well as all vehicular luminaires, shall be exempt from the requirements of this Ordinance.
- (2). **Temporary Non-Emergency Lighting.** The temporary use of low wattage or low voltage lighting for festivals, celebrations, and the observance of holidays are exempt from regulation except where they create a hazard or nuisance from glare. Light trespass requirements remain in effect.

F. Prohibitions

- (1). **Laser Source Light.** The use of laser source light or any similar high intensity light for outdoor advertising or entertainment, when projected above the horizontal is prohibited.
- (2). **Searchlights.** The operation of searchlights for advertising purposes is prohibited.
- (3). **Outdoor Advertising Off-Site Signs.** Electrical illumination of outdoor advertising off-site signs is prohibited.
- (4). **Outdoor Advertising On-Site Signs.** Electrical illumination of outdoor advertising on-site signs is prohibited unless a lighting plan is submitted and approved by the Board of Supervisors. Under no circumstances may the lighted portion of an outdoor sign exceed 9 (nine) square feet per side, and the total lighted portion of an outside sign may not exceed 18 square feet.
- (5). **Communications or Navigation Tower Lighting.** The nighttime use of white lighting or white strobe lighting is prohibited unless specifically required by the FAA. Applicants must show proof of any such FAA requirement.

G. Modifications

An applicant may request the Board of Supervisors to grant a modification of the requirements of one or more provisions of this Ordinance if the literal enforcement will exact undue hardship because of peculiar conditions to the land in question; provided, that such modification will not be contrary to the public interest and that the purpose of the intent of this Ordinance is observed. All requests for modification shall be in writing and shall accompany and be part of the application for development. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of this Ordinance for which the modification is requested and a description of the minimum modification necessary.

H. Law Governing Conflicts

Where any provision of federal, state, county, or town statutes, codes, or laws conflicts with any provision of this code, the most restrictive shall govern unless otherwise regulated by law.

Section 2 Adoptions by Reference

A. Adoption of the ES Lighting Handbook

The most recent edition, as published by the Illuminating Engineering Society of North America (IESNA), and referred to in this Ordinance as "The ES Lighting Handbook," is hereby adopted by reference and made a part hereof as if fully set out in this Ordinance.

B. Adoption of the ANSI/ES Lighting Definitions

The most recent edition, as published by the Illuminating Engineering Society of North America (IESNA) and approved by the American National Standards Institute, Inc. (ANSI), and referred to in this Ordinance as "The ANSI/ES Lighting Definitions," is hereby adopted by reference and made a part hereof as if fully set out in this Ordinance.

Section 3 Definitions

Selected Lighting Definitions

The following lighting definitions are selected from The ANSI/IES Lighting Definitions and The ES Lighting Handbook for ready reference within the text of this Ordinance and within the technical documents adopted in Section 2 of this Ordinance:

Candela. The SI unit of luminous intensity. One candela is one lumen per steradian (lm/sr).

Candlepower. Luminous intensity expressed in candelas.

Cutoff Angle (of a luminaire). The angle, measured up from nadir, between the vertical axis and the first line of sight at which the bare source is not visible.

Footcandle. A unit of illuminance. One footcandle is one lumen per square foot (lm/ft²).

Glare. The sensation produced by luminances within the visual field that is sufficiently greater than the luminance to which the eyes are adapted to cause annoyance, discomfort, or loss in visual performance or visibility.

Blinding Glare. Glare that is so intense that for an appreciable length of time after it has been removed, no object can be seen.

Direct Glare. Glare resulting from high luminances or insufficiently shielded light sources in the field of view.

Disability Glare. The effect of stray light in the eye whereby visibility and visual performance are reduced.

Discomfort Glare. Glare that produces discomfort. It does not necessarily interfere with visual performance or visibility.

Reflected Glare. Glare resulting from reflections of high luminances in polished or glossy surfaces in the field of view.

Illuminance. The areal density of the luminous flux incident at a point on a surface.

Illumination. An alternative term for illuminance. Commonly used in a qualitative or general sense to designate the act of illuminating or the state of being illuminated.

Lamp. A generic term for a man-made source of light.

Light. Radiant energy that is capable of exciting the retina and producing a visual sensation. The visible portion of the electromagnetic spectrum extends from about 380 to 770 nanometers.

Light Loss Factor (LLF). The ratio of illuminance for a given area to the value that would occur if lamps operated at their initial rated lumen output and if no system variation or depreciation had occurred.

Light Trespass. A subjective perception of undesirable illumination including the following examples:

1. The classic "light shining in a window"
2. Unwanted light on an adjacent property
3. Excessive brightness in the normal field of vision (nuisance glare)

Lumen. SI unit of luminous flux. Photometrically, it is the luminous flux emitted within a unit solid angle (one steradian) by a point source having a uniform luminous intensity of one candela.

Luminaire. A complete lighting unit consisting of one or more lamps (light sources) together with the parts designed to control the light distribution, and other mechanical and electrical components.

Cutoff Luminaire. A luminaire light distribution is designated as cutoff when the candlepower per 1000 lamp lumens does not numerically exceed 25 (2.5%) at an angle of 90 above nadir (horizontal), and 100 (10%) at a vertical angle of 80 above nadir.

Luminance. The emitted or reflected light from a surface; relates directly to perceived "brightness." The unit of luminance is the candela per square meter (cd/m²).

Luminous Flux. Radiant flux (radiant power); the time rate of flow of radiant energy evaluated in terms of a standardized visual response.

Luminous Intensity. The luminous flux per unit solid angle in the direction in question. May be expressed in candelas or lumens per steradian (lm/sr).

Lux. The SI unit of illuminance. One lux is one lumen per square meter (lm/m²).

Nighttime. The hours between the end of evening civil twilight and the beginning of morning civil twilight. Civil twilight ends in the evening when the center of the sun's disk is 6 degrees below the horizon, and begins in the morning when the center of the sun's disk is 6 degrees below the horizon.

Spill Light. Light shining beyond a facility that may annoy occupants of the adjacent property.

Section 4
General Design Requirements

Design Calculations in Accordance With The IES Lighting Handbook

In addition to the specific requirements established in this Ordinance, the design calculations for outdoor lighting installations shall be in accordance with the IES Lighting Handbook. This includes, but is not limited to, technical definitions, terminology, calculation methods and procedures, photometric classifications, and photometric testing procedures. Illuminance selection should be based on the usage of the area to be illuminated, the level of activity, and nighttime security requirements.

Section 5
Specific Requirements

A. Illumination Levels

Illumination shall have intensities and uniformity ratios in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook, from which sample typical uses and tasks are herein presented:

Use/Task	Maintained Footcandles	Uniformity - Avg:Min.
(a) Streets, local residential use	0.4 Avg.	6:1
(b) Streets, local commercial use	0.9 Avg.	6:1
(c) Parking, residential:		
Low vehicular/ pedestrian activity	0.2 Min.	4:1
Medium vehicular/ pedestrian activity	0.6 Min.	4:1
(d) Parking, industrial/ commercial/ institutional/ municipal	0.6 Min.	4:1
(e) Walkways and Bikeways	0.5 Avg.	5:1
(f) Building entrances	5.0 Avg.	-

Table 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 activity, the average footcandles shall not be in excess of 2.4 (0.6 x 4).

B. Fixture Design

- (1). Fixtures shall be of a type and design appropriate to the lighting application.
- (2). For lighting of horizontal tasks such as roadways, pathways and parking areas, fixtures shall meet IESNA cutoff criteria (not have more than 2.5% of their light output emitted above 90 degrees at any lateral angle around the fixture).
- (3). The use of floodlighting, spotlighting, and other fixtures not meeting IESNA cutoff criteria, shall be permitted only with the approval of the Board of Supervisors, based upon acceptable glare control.
- (4). Fixtures shall be equipped with or be capable of being back-fitted with light-directing devices such as shields, visors or hoods when necessary to redirect offending light distribution.

C. Control of Nuisance and Disabling Glare

- (1). All outdoor lighting, whether or not required 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 (disabling glare), and so as not to create a nuisance by projecting or reflecting objectionable light onto a neighboring use or property (nuisance glare).
- (2). Flood or spot lights shall be so installed or aimed that they do not project their output into the window of a neighboring residence, an adjacent use, directly skyward or onto a roadway.
- (3). Unless otherwise permitted by the Board of Supervisors, lighting shall be controlled by automatic switching devices such as timers, motion detectors and photocells, to extinguish offending sources between the hours of 10:00 p.m. and sunrise to mitigate glare and sky-lighting consequences. Where all-night safety or security lighting is deemed necessary, the lighting intensity levels shall generally not exceed 25% of the levels normally permitted by this Ordinance but in no case shall they be less than the minimum levels for safety or security as invoked by IESNA.
- (4). 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 mounting height, wattage, aiming angle, fixture placement, etc.
- (5). The amount of illumination projected onto a residential use from another property shall not exceed 0.1 vertical footcandle at the dwelling.
- (6). The amount of illumination projected over any property line from another property shall not exceed 1.0 vertical footcandle.

D. Installation

- (1). Fixtures meeting IESNA cutoff criteria shall not be mounted in excess of 20 feet above finished grade or mounted in excess of the maximum building height permitted in the district, whichever is less. Fixtures not meeting IESNA cutoff criteria shall not be mounted in excess of 15 feet above grade except as specifically approved by the Board of Supervisors.
- (2). Fixtures used for general area lighting shall be aimed so as to project their output straight down, unless otherwise approved.

(3). Lighting standards in parking areas shall be placed a minimum of 5 feet outside paved area, or on concrete pedestals at least 30 inches high above the pavement, or by other approved protective means.

(4). Fixtures used for architectural lighting, e.g., facade, feature, and landscape lighting shall be aimed so as not to project their output beyond the objects intended to be illuminated and shall be extinguished between the hours of 2:00 a.m. and sunrise.

E. Maintenance

Lighting fixtures shall be maintained so as to always meet the requirements of this Ordinance.

Section 6 **Plan Submission**

A. Plan Submission

(1). When deemed necessary by the Township Supervisors, lighting plans shall be submitted to the Township for review and approval and shall include:

(A). Layout of the proposed fixture locations;

(B). Isofootcandle plots for individual fixture installations and 10X10 illuminance grid plots for multi-fixture installations, that demonstrate compliance with the intensities and uniformities set forth in this Ordinance;

(C). Description of the equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, control devices, mounting heights and mounting methods proposed. When requested by the Board of Supervisors, applicant shall submit a visual impact plan that demonstrates appropriate steps have been taken to mitigate glare.

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

B. Post Installation Inspection

The Township reserves the right to conduct a post installation nighttime inspection to verify compliance with the requirements of this Ordinance and, if appropriate, to require remedial action.

C. Fees

Each plan submission shall be accompanied by a non-refundable cash fee to cover the cost to the Township of inspection, investigation, issuance and administration. The amount of the fee will be set by resolution of the Board of Supervisors.

Section 7
Compliance

A. Safety Hazards

(1). If the Township judges a lighting installation creates a safety or personal-security hazard, the person(s) responsible for the lighting shall be so notified and required to take remedial action within 60 days.

(2). If appropriate corrective action has not been effected within the specified time period, the Township may take appropriate legal action.

B. Nuisance Glare and Inadequate Illumination Levels

(1). When the Township judges that an installation produces unacceptable levels of nuisance glare or skyward light or that illumination levels are insufficient or not being maintained in accordance with this Ordinance, the Township shall cause notification of the person(s) responsible for the lighting and require remedial action.

(2). If the infraction so warrants, the Township may act to have the problem corrected as in 7. A above.

C. Street Lighting Dedication

(1). The Township may accept dedication of street lighting facilities in the instance of said lighting being in the right-of-way of a street dedicated to the Township. Street lighting may be accepted along with the acceptance of the street.

(2). Until such time as the street lighting is dedicated, the developer of the tract (who has escrowed the street lighting) will be responsible for any and all costs associated with each streetlight. Such costs shall include, but not be limited to: administration, placement, electrical charges from the utility and maintenance.

(3). Streetlights not dedicated to the Township will remain the responsibility of the developer or appropriate private entity to which the lights are turned over. Said private entity shall then assume all costs and responsibilities for the lighting in perpetuity.

Section 8.
Severability

The provisions of this Ordinance are severable, and if any provision of this Ordinance or the application thereof is held invalid, the invalidity shall not affect other provisions or applications of this Ordinance.

Section 9.
Penalties

Any person who shall violate or permit the violation of this Ordinance shall, upon being found liable therefor in a civil proceeding commenced by this Township, pay a civil penalty of not less than Two Hundred and no/100 (\$200) Dollars and not more than One Thousand and no/100 (\$1000) Dollars plus all court costs, including reasonable attorney fees, incurred by this Township. Each day that a violation shall continue past the period stated in section 7A of this Ordinance shall be deemed and shall be taken to be a separate offense and shall be subject to an additional civil penalty.

Section 10.
Enforcement

The official designated by the Supervisors of Cooke Township shall be and hereby are charged with the authority and responsibility of enforcing the provisions of this Ordinance.

Section 11.
Inconsistent Ordinances Repealed

All other Ordinances or parts of Ordinances in conflict herewith are hereby repealed.