

CHAPTER 14

LIGHTING

ARTICLE I

STREET LIGHT DISTRICTS AND ASSESSMENTS

- Section 101. Street Lighting Districts**
- Section 102. Assessment**
- Section 103. Authorization of Township Engineer**
- Section 104. Authorization of Township Solicitor**

ARTICLE II

OUTDOOR LIGHTING DESIGN, CONSTRUCTION AND STANDARDS

- Section 201. Purpose**
- Section 202. Applicability**
- Section 203. Definitions**
- Section 204. Performance Criteria and Illumination Requirements**
- Section 205. Lighting Fixture Design for Areas Other Than Township-Owned Streets and Sidewalks**
- Section 206. Lighting Fixture Design and Types for Township-Owned Street and Sidewalks**
- Section 207. Control of Nuisance and Disabling Glare**
- Section 208. Installation**
- Section 209. Maintenance**
- Section 210. Street Lighting for Residential Applications**
- Section 211. All Land Development and other Non-residential Developments**
- Section 212. Plan Submission**
- Section 213. Post Installation Inspection**
- Section 214. Street Lighting Dedication**
- Section 215. General Requirements**
- Section 216. Compliance Monitoring**
- Section 217. Nonconforming Lighting**
- Section 218. Violations and Penalties**
- Section 219. Abatement of Nuisances**

LIGHTING

ARTICLE I

STREET LIGHT DISTRICTS AND ASSESSMENTS

Section 101. Street Lighting Districts

Pursuant to 53 P.S. Section 67002, the Board of Supervisors of the Township of Ontelaunee may, from time to time, by Resolution, layout and create such Street Lighting Districts as the Board shall deem to be in the best interest and welfare and safety of the residents of the area within such district.

Ord. 2007-4, 9/16/2007, §1.

Section 102. Assessment

In order to pay for the cost of such public lighting the Township shall, by Ordinance or Resolution, levy a uniform annual assessment on each property within a Street Lighting District.

Ord. 2007-4, 9/16/2007, §2.

Section 103. Authorization of Township Engineer

The Township Engineer of the Township of Ontelaunee is hereby authorized and directed to take whatever steps are necessary to carry out the provisions of this Ordinance.

Ord. 2007-4, 9/16/2007, §3.

Section 104. Authorization of Township Solicitor

The Township Solicitor of the Township of Ontelaunee is hereby authorized and directed to take whatever steps are necessary to carry out the provisions of this Ordinance.

Ord. 2007-4, 9/16/2007, §4.

ARTICLE II

OUTDOOR LIGHTING DESIGN, CONSTRUCTION AND STANDARDS

Section 201. Purpose

- A. To require and set minimum standards for outdoor light to:
1. Provide lighting in outdoor public places where public health, safety and welfare are potential issues.
 2. Protect drivers and pedestrians from the glare of non-vehicular light sources that shine into their eyes and thereby impair safe traverse.
 3. Protect neighbors and the night sky from nuisance glare and stray light from poorly shielded, aimed, placed applied or maintained light sources.
 4. Promote efficient design and operation with regard to energy conservation.
 5. Protect and retain the established character of the Township.
 6. For the purpose of assuring the proper design and construction of all outdoor lighting within the Township, and to provide regulations to control the intensity and distribution of the lighting sources thereby assuring safety within the Township.

Ord. 2004-11, 9/2/2004, §A.

Section 202. Applicability

- A. Outdoor lighting shall be required for safety and personal security for uses that may operate during hours of darkness where there is public assembly and/or traverse, including but not limited to the following uses: residential, commercial, industrial, public-recreational, municipal and institutional.
- B. The Board of Supervisors may require that lighting be incorporated for other uses or locations, as they deem necessary.
- C. 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.
- D. This ordinance does not apply to temporary decorative lighting.

LIGHTING

E. All parking lots shall be illuminated.

Ord. 2004-11, 9/2/2004, §B.

Section 203. Definitions

The following definitions are selected from the ANHSI/IES Lighting definitions and the ES Lighting Handbook for ready reference. Any definitions that are not in this Ordinance shall be as references in these documents.

- A. **FOOTCANDLE** – A unit of illumination stated in lumens per square foot and measurable with an illuminance meter, a.k.a. footcandle or light meter.
- B. **FULL CUTOFF** – A term used by the lighting industry to describe a lighting fixture from which no light output is emitted at or above a horizontal plane drawn through the bottom of the fixture and no more than ten percent (10%) of the lamp's light intensity is emitted at an angle ten degrees (10°) below that horizontal plane, at all lateral angles around the fixture. Implicit in the definition is a fixture that is aimed straight down and has a flat lens.
- C. **GLARE** – The sensation produced by lighting that causes an annoyance, discomfort or loss in visual performance and visibility to the eye.
- D. **BLINDING GLARE** – glare that is so intense that for an appreciable length of time after it has been removed, no object can be seen.
- E. **DIRECT GLARE** – glare that is so intense that for an appreciable length of time after it has been removed, no object can be seen.
- F. **DISABILITY GLARE** – The effect of stray light in the eye whereby visibility and visual performance are reduced.
- G. **DISCOMFORT GLARE** – Glare that produces discomfort. It does not necessarily interfere with visual performance of visibility.
- H. **REFLECTED GLARE** – Glare resulting from reflections of high luminances in polished or glossy surfaces in the field of view.
- I. **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.
- J. **ILLUMINANCE** – the intensity of incident light at a point, measured with a light meter in footcandles or lux.
- K. **LIGHT TRESPASS** – Light emitted by a lighting installation, which extends beyond the boundaries of the property on which the installation is sited.

- L. **LUMINANCE** – The physical and measurable quantity corresponding to the brightness of a source or surface, e.g., a lamp, luminaire, reflecting material, in a specific direction and measurable with a luminance meter.
- M. **LUX** – A unit of illuminance state in lumens per square meter. There are approximately 10.7 lux per footcandle.

Ord. 2004-11, 9/2/2004, §C.

Section 204. Performance Criteria and Illumination Requirements

A. Illumination Levels

1. Lighting, where required or permitted by this Ordinance, shall have intensities and uniformity ratios in accordance with the current recommended practices of Illuminating Engineering Society of North America (IESNA) as contained in the IESNA Lighting Handbook or separately in IESNA Recommended Practices, and as from time to time amended.
2. Future amendments to IESNA recommended practices shall become a part of this Ordinance without further action of the Township.
3. Requirements for intensities for typical outdoor applications, as extracted from the Lighting Handbook, are presented below.

LIGHTING

	Footcandles	Ratio
(a) Streets, commercial Streets, residential	0.9 Avg. See Section F	6:1 Avg:Min See Section F
(b) Parking, multi-family residential <ul style="list-style-type: none"> • 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 / municipal <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Commercial • Residential 	1.0 Avg. See Section F	5:1 Avg:Min See Section F
(e) Building entrances, commercial, industrial, institutional	5.0 Avg.	-
(f) Service Station Pump Islands	20.0 Avg.	4:1 Avg:Min
(g) Car Dealerships	20.0 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).

Ord. 2004-11, 9/2/2004, §D.

Section 205. Lighting Fixture Design for Areas Other Than Township-Owned Street and Sidewalks

- A. Fixtures shall be of a type and design appropriate to the lighting application and aesthetically acceptable to the Township.
- B. For lighting horizontal tasks such as roadways, sidewalks, paths, entrances and parking areas, fixtures shall be aimed straight down, shall have flat lenses and shall meet IESNA full-cutoff criteria.
- C. The use of floodlighting, spotlighting, wall mounted fixtures, internally illuminated 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 acceptable justification and achievement of adequate glare control.
- D. When requested by the Township, fixtures shall be equipped with 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.
- E. For residential applications, fixtures with an aggregate per fixture output in excess of one thousand (1000) lumens shall meet IESNA full-cutoff criteria.
- 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 a reflector or shield to render them full cutoff.

Ord. 2004-11, 9/2/2004, §E.

Section 206. Lighting Fixture Design and Types for Township-Owned Street and Sidewalks:

- A. Type Fixture: Fixtures shall utilize light-emitting diode (LED) technology, or other updated technology as may be adopted by resolution of the Township from time to time. Fixtures shall be of a type and design appropriate to the lighting application and aesthetically acceptable to the Township. Street or sidewalk lighting supplied with unmetered electric service shall meet the specifications of the electric utility. Street lighting shall produce a Type III illumination pattern. [Ord. 2017-7]
- B. Electrical Specifications: Electrical installation of street or sidewalk 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, with a copy to the Township, thereby allowing the utility to provide pole illumination. [Ord. 2017-7]
- C. Pole Height: Pole height shall be twenty two feet (22'), with an eight foot (8') horizontal projection mast arm, providing an approximate twenty five foot (25') fixture mounting height.

LIGHTING

- D. Pole Spacing and Location: Poles shall be located between the curb and sidewalk or a minimum of five feet (5') behind the edge of an uncurbed road. Maximum spacing between poles shall be three hundred feet (300'). At least one (1) pole shall be located at each street intersection.
- E. Pole Type: The poles shall be made for an aluminum alloy and shall be of the round, tapered type, finished as brushed aluminum. The base of the pole shall be cast aluminum to accept four (4) anchor bolts. Aluminum covers shall be provided for the anchor bolts, nuts and washers. Strength for Metal Poles: The pole wall thickness shall be governed by the EPA safety rating for poles and fixtures subjected to ninety mile-per-hour (90 mph) winds.
- F. Hand Hole: The poles shall be provided with a reinforced hand hold and cover, minimum size four inches by seven inches (4" by 7").
- G. Anchor Bolts: Anchor bolts shall consist of four (4) hooked type anchor bolts with hex nuts and washers, of the size recommended by the pole manufacturer. Hot-dip galvanize all anchorage hardware, steel flat or spring lock washers and top 12" of anchor bolts. [Ord. 2017-7]
- H. Ground Rod: The concrete foundation shall contain a five eighth inch (5/8") diameter by eight foot (8') long copperweld ground rod through the center of the foundation, extending at least one foot (1') into the ground.
- I. Pole Foundations: Foundations shall be cast-in-place concrete in a formed cylinder with a minimum diameter of eighteen inches (18"), constructed in an augured hold. Foundations shall have a minimum depth of four feet (4') below grade. If pole manufacturer recommendations exceed this standard, said recommendations shall be utilized. Foundations shall be reinforced by a steel rebar cage consisting of four (4) vertical #6 rebar welded to a series of circular #3 rebar. The #3 rebar shall be formed to twelve inch (12") diameter circles and shall be welded to the #6 rebar at twelve inch (12") vertical intervals. The concrete shall be minimum four thousand (4,000) psi 28-day compressive strength. The top of the foundation shall be three inches (3") above grade and shall have a beveled edge around the top periphery.

Ord. 2004-11, 9/2/2004, §F; as amended by Ord. 2017-7, 8/3/2017, §1.

Section 207. Control of Nuisance and Disabling Glare

- A. 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 and so as not to create a nuisance by projecting or reflecting objectionable light onto a neighboring use or property. All outdoor light fixtures shall be shielded in such a

manner that not 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.

- B. All outdoor lighting fixtures that light the area under outdoor canopies 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. The canopies should be fitted with a shield, or the lights shall be recessed into the canopy. 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, when specifically approved by the Township for use, shall be so installed or 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.
- D. Flagpole lighting sources shall not exceed ten thousand (10,000) lumens per flagpole.
- E. Vegetative 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.
- 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-site, from any point on the adjacent residential property.
- G. Except as specifically approved by the Board of Supervisors, fixtures meeting IESNA full-cutoff criteria shall not be mounted in excess of twenty feet (20') above finished grade. Fixtures not meeting IESNA "cutoff" criteria, when specifically approved by the Board of Supervisors shall not be mounted in excess of sixteen feet (16') above ground.
- H. Directional fixtures, e.g., floodlights or spotlights, for such applications as façade, fountain, feature, recreational and landscape illumination 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 11 p.m. and 7 a.m.

LIGHTING

- I. The use of white strobe lighting for tall structures such as smokestacks, chimneys and radio/communication/television towers is prohibited during hours of darkness, except as specifically required by FAA.

Ord. 2004-11, 9/2/2004, §G.

Section 208. Installation

- A. Electrical feeds for fixtures mounted on poles run underground, unless overhead feeds are specifically approved by the Board of Supervisors.
- B. Poles supporting lighting fixtures for the illumination of parking areas and located directly behind parking spaces, shall be placed a minimum of five feet (5') outside paved area, curbing or tire stops, or on concrete pedestals at least thirty inches (30") high above the pavement, or suitably protected by other approved means.

Ord. 2004-11, 9/2/2004, §H.

Section 209. Maintenance

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

Ord. 2004-11, 9/2/2004, §I.

Section 210. Street Lighting for Residential Applications

- A. Where required in this ordinance for residential uses, lighting shall be provided as follows:
 1. At the intersection of entrance roads to the development with a public road.
 2. At the intersection of public roads within the development with the development's interior roads.
 3. At cul-de-sac bulb radii.
 4. At terminal ends of center median islands having concrete structures, curbing, trees and/or other fixed objects, (e.g. signs that are not breakaway).
 5. At defined pedestrian crossing located within the development.

6. As required by Section 206 of this Ordinance.

Ord. 2004-11, 9/2/2004, §J.

Section 211. All Land Development and other Non-residential Developments

- A. All requirements are applicable as specified within this ordinance for any/all non-public roads designed as thoroughfares through the proposed development, and these road shall be consider a public road as it pertains to the interpretation of the applicable sections of this Ordinance.
- B. All parking areas and other features of the non-residential developments that are required by the performance criteria to be illuminated shall meet all of the applicable sections of this Ordinance.

Ord. 2004-11, 9/2/2004, §K.

Section 212. Plan Submission

- A. 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, special exception, variance application or building permit where applicable, and 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, and a layout of all proposed fixtures by location, mounting height and type. The submittal shall include in addition to area lighting, architectural lighting, building-entrance lighting, landscape lighting, etc.
 2. 10'x10' illuminance-grid (point-by-point) plot of maintained footcandles, carried out to 0.0 footcandles, which demonstrates compliance with the light trespass, intensity and uniformity requirements as set forth in this Ordinance. The maintenance (light-loss) factor used in calculating the illuminance levels shall be documented on this plan.
 3. 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. A pole foundation detail is to be provided on the plan.
 4. When requested by appropriate officers or agents of the Township, applicant shall also submit a visual-impact plan that demonstrates appropri-

LIGHTING

ate steps have been taken to mitigate on-site and off-site glare and light trespass and to retain the Township's intended character.

- B. Post-approval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to the Township for review and approval. A note to that effect shall be placed on the lighting plan.

Ord. 2004-11, 9/2/2004, §L.

Section 213. Post Installation Inspection

- A. 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 at no expense to the Township. A note to that effect shall be placed on the lighting plan.

Ord. 2004-11, 9/2/2004, §M.

Section 214. Street Lighting Dedication

- A. When street lighting is to be dedicated to the Township, the applicant shall be responsible for all costs involved in the lighting of streets and street intersections from the date the first dwelling is occupied until the date the street is accepted for dedication.
- B. Upon dedication of public roads, the Township shall assess the homeowners' association, individual property owners, or corporations, as may be necessary, to collect all revenues required which are directly or indirectly associated with all costs of each specific street lighting fixture. These costs
 1. Administration
 2. Collection
 3. Pro ration of non payables
 4. Actual electrical charges from the utility
 5. All maintenance and maintenance contracts necessary for the proper maintenance of said fixtures.
- C. Prior to dedication, and in the event of the formation of a homeowners' association and/or property management declaration, the Township shall require said agency to enter into an agreement guaranteeing the Township payment of all costs associated with street lighting.

Ord. 2004-11, 9/2/2004, §N.

Section 215. General Requirements

- A. Splicing: No underground splices will be permitted.
- B. Inspection: No work shall be backfilled prior to it being inspected and approved by an individual designated by the Township. In addition, prior to the system being energized, the contractor shall obtain an inspection certificate, approving the entire system, by an independent inspection agency and this approval shall be submitted in writing to the Township.
- C. Approval: Approval of proposed roadway lighting installation plan, including but not limited to the type of poles, fixtures, wiring, wattage of lamps, ballasts, spacing of fixtures, calculation of voltage drop in circuit shall be given by Township Supervisors and before beginning construction. In addition, the contractor shall be responsible to coordinate the installation with the public utility company.
- D. Materials: All materials shall be of the latest improvements in the trade.
- E. As Built: Three (3) sets of “as built” shall be submitted by the contract to the Township Supervisors at the conclusion of the roadway lighting construction. The minimum information supplied shall be the same as indicated in Section 212 of this Ordinance.
- F. Changes in Regulations and Standards: The Supervisors of the Township reserve unto themselves the right, from time to time, as they deem necessary to assure proper new street light and pole construction in the Township, to amend and modify, by resolution, the standards and regulations herein set forth, of which proper public notice shall be given, and which resolution or resolutions shall be in writing and attached hereto and made a part hereof.

Ord. 2004-11, 9/2/2004, §O.

Section 216. Compliance Monitoring

- A. Safety Hazards
 - 1. If appropriate offices or agents or the Township Judge a lighting installation 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 thirty (30) days of written notification, the Township may commence legal action as provided in Sections 218 and 219 below.

LIGHTING

B. Nuisance Glare and Inadequate Illumination Levels

1. When appropriate offices or agents of the Township judge an installation produces unacceptable levels of nuisance glare, direct skyward light, excessive or insufficient illumination levels or otherwise varies from this Ordinance, the 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 thirty (30) days of notification, the Township may commence legal action as provided in Sections 218 and 219 below.

Ord. 2004-11, 9/2/2004, §P.

Section 217. 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 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 Ordinance when:
 - a. It is deemed by the Township to create a safety hazard
 - b. It is replaced, abandoned or relocated
 - c. There is a change in use or the property on which the area being illuminated is located.
 2. Nonconforming lighting fixtures and lighting installations shall be made to conform with the requirements of this Ordinance or removed within two (2) years after the effective date of this Ordinance.

Ord. 2004-11, 9/2/2004, §Q.

Section 218. 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 Five Hundred Dollars (\$500.00), 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 Rule 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.

Ord. 2004-11, 9/2/2004, §R.

Section 219. Abatement of Nuisances

- A. In addition to any other remedies provided in this Ordinance, any violation of Section 207 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, including enforcement under the Township's Nuisance Ordinance.

Ord. 2004-11, 9/2/2004, §S.