

MIDDLESEX TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA

ORDINANCE NO. 12-2008

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF MIDDLESEX TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA, AMENDING SECTION 711 OF THE MIDDLESEX TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND ARTICLE XIV OF THE MIDDLESEX TOWNSHIP ZONING ORDINANCE TO PROVIDE FOR OUTDOOR LIGHTING STANDARDS AND REGULATIONS.

BE IT HEREBY ENACTED AND ORDAINED, and it is hereby enacted by the Board of Township Supervisors in and for the Township of Middlesex, Cumberland County, Pennsylvania, as follows:

SECTION 1: Section 711 of Article VII, Design and Construction Standards, of the Middlesex Township Subdivision and Land Development Ordinance is hereby amended in its entirety to provide as follows:

Section 711. Outdoor Lighting Requirements and Design Standards.

- A. Purpose – To purpose of this Section is to require and set minimum standards for outdoor lighting to:
1. Provide for and control lighting in outdoor public places where public health, safety and welfare are potential concerns.
 2. Protect drivers and pedestrians from the glare of non-vehicular light sources.
 3. Protect persons, the environment and the night sky from nuisance glare and light trespass from improperly selected, placed, aimed, applied, maintained or shielded light sources.
 4. Promote energy efficient lighting design and operation.
 5. Protect and retain the intended visual character of various scenic venues throughout Middlesex Township.
- B. Applicability.

1. The provisions of this Section shall apply to all lighting associated with, required or proposed with any action that constitutes land development or subdivision within Middlesex Township where there is interior or exterior lighting viewable from outside, including, but not limited to, residential, commercial, industrial, public and private recreational/sports and institutional uses, and sign, billboard, architectural and landscape lighting applications.
 2. The glare-control requirements herein contained apply to outdoor lighting in all uses, applications and locations.
 3. Emergency lighting, as may be required by any public agency while engaged in the performance of their duties, or for illumination of the path of egress during an emergency as described in NFPA 75 and NFPA 101, is exempt from the requirements of this Section.
 4. Temporary seasonal decorative lighting is exempt from all but the glare-control requirements of this Section.
- C. Definitions. The following words or terms as used in this Section shall be defined as follows:
1. Footcandle – Unit of light density incident on a plane (assumed to be horizontal unless otherwise specified), and measurable with an illuminance meter, a.k.a. light meter.
 2. Full Cutoff – Attribute of a lighting fixture from which no light 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 intensity is emitted at or above an angle ten degrees (10°) below that horizontal plane, at all lateral angles around the fixture.
 3. Fully Shielded – Attribute of a lighting fixture provided with internal and/or external shields and louvers to prevent brightness from lamps, reflectors, refractors and lenses from causing glare at normal viewing angles.
 4. Glare – Excessive brightness in the field of view that is sufficiently greater than the brightness to which the eyes are adapted, to cause annoyance or loss in visual performance and visibility, so as to jeopardize health, safety or welfare.
 5. Illuminance – Quantity of light, measured in footcandles.
 6. Light Trespass – Light emitted by a lighting fixture or installation, which is cast beyond the boundaries of the property on which the lighting installation is sited.
 7. Lumen – As used in the context of this Section, the light-output rating of a lamp (light bulb).

D. Criteria.

1. Illumination Levels – Lighting, where required by this Ordinance, or otherwise required or permitted by the Board of Supervisors, shall have intensities, uniformities and glare control in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IESNA), unless otherwise directed by the Board of Supervisors.
2. Lighting shall conform to the currently adopted Middlesex Township Building Codes, including the currently adopted International Energy Conservation Code published by the International Code Council, and the standards referenced therein for required Exterior Lighting Power Densities and Exterior Lighting Power Allowances, as published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. and the Illuminating Engineering Society of North America (ASHRAE/IESNA 90.1 Standard).
3. Lighting Fixture Design.
 - a. Fixtures shall be of a type and design appropriate to the lighting application.
 - b. For the lighting of predominantly horizontal surfaces such as, but not limited to parking areas, roadways, vehicular and pedestrian passage areas, merchandising and storage areas, automotive-fuel dispensing facilities, automotive sales areas, loading docks, cul-de-sacs, active and passive recreational areas, building entrances, sidewalks, bicycle and pedestrian paths, and site entrances, fixtures shall be aimed straight down and shall meet IESNA full-cutoff criteria. Fixtures, except those containing directional lamps, with an aggregate rated lamp output not exceeding five hundred (500) lumens, e.g., the rated output of a standard non-directional forty (40) watt incandescent or ten (10) watt compact fluorescent lamp, are exempt from the requirements of this paragraph. In the case of decorative street lighting, the Board of Supervisors may approve the use of luminaires that are fully shielded or comply with IESNA cutoff criteria.
 - c. For the lighting of predominantly non-horizontal surfaces such as, but not limited to, facades, landscaping, signs, billboards, fountains, displays and statuary, fixtures shall be fully shielded and shall be installed and aimed so as to not project their output into the windows of residences, adjacent uses, past the object being illuminated, skyward or onto a public roadway. Fixtures, except those containing directional lamps, with an aggregate rated lamp output not exceeding five hundred (500) lumens, e.g., the rated output of a standard non-directional forty (40) watt incandescent or ten (10) watt compact fluorescent lamp, are exempt from the requirements of this paragraph.
4. Control of Glare.

- a. 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 roadways and so as not to create a nuisance by projecting or reflecting objectionable light, including excessive illumination, glare, light pollution and light trespass, onto another use or property.
- b. Directional fixtures such as floodlights and spotlights shall be so shielded, installed and aimed that they do not project their output into the windows of residences, adjacent uses, past the object being illuminated, skyward or onto a public roadway or pedestrian way. Floodlights, when installed on a building, pole or otherwise installed above grade on residential properties, except when motion-sensor actuated, shall not be aimed out more than forty five degrees (45°) from straight down. When a floodlight creates glare as viewed from residential property, the floodlight shall be required to be re-aimed and/or fitted with a shielding device to block the view of the glare source from that property.
- c. Exterior lighting fixture types, commonly called “barn lights,” “dusk-to-dawn lights,” or “yard lights,” when a source of glare as viewed from another property, shall not be permitted unless effectively shielded as viewed from that property.
- d. Parking facility and vehicular and pedestrian-way lighting (except for safety and security applications and all-night business operations), for commercial, industrial and institutional uses shall be automatically extinguished no later than one-half (1/2) hour after the close of business or facility operation. When safety or security lighting is proposed for after-hours illumination, it shall not be in excess of twenty-five percent (25%) of the number of fixtures or illumination level required or permitted for illumination during regular business hours. When it can be demonstrated to the satisfaction of the Board of Supervisors that an elevated security risk exists, e.g., a history of relevant crime, an appropriate increase above the twenty-five percent (25%) limit may be permitted.
- 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 full cutoff fixtures, shields and baffles, and appropriate application of fixture mounting height, wattage, aiming angle and fixture placement.
- f. The illumination projected from any use onto a residential use shall at no time exceed one-tenth (0.1) footcandle, measured line-of-sight from any point on the receiving residential property.
- g. The illumination projected from any property onto a non-residential use shall at no time exceed one (1.0) footcandle, measured line-of-sight from any point on the receiving property.

- h. Only the United States and the state flag shall be illuminated from dusk till dawn. All other flags shall not be illuminated between 11:00 p.m. and dawn. Flag lighting sources shall not exceed seven thousand (7,000) lamp lumens per flagpole. The light source shall have a beam spread no greater than necessary to illuminate the flag and shall be adequately shielded so that it is not visible at normal viewing angles.
- i. Lighting for use underneath canopies for such applications as gas/service stations, hotel/theater marquees, fast-food/bank/drugstore drive-ups, shall be accomplished using flat-lens full-cutoff fixtures aimed straight down and shielded in such a manner that the lowest opaque edge of the fixture shall be below the light source at all lateral angles. The average illumination in the area directly below the canopy shall not exceed twenty (20) footcandles and the maximum shall not exceed thirty (30) footcandles.
- j. 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.
- k. Except as permitted for certain recreational lighting and permitted elsewhere in this paragraph, fixtures shall not be mounted in excess of twenty (20) feet above finished grade of the surface being illuminated. Mounting height shall be defined as the distance from the finished grade of the surface being illuminated to the optical center of the luminaire. For uses in all commercial and industrial districts having contiguous paved parking and maneuvering areas in excess of thirty thousand (30,000) square feet, at the sole discretion of the Board of Supervisors, Middlesex Township may permit the use of a mounting height not to exceed twenty-five (25) feet for fixtures meeting IESNA full-cutoff criteria when it can be demonstrated to the Board of Supervisors that light trespass and glare control requirements in this Section have been met. For recreational lighting maximum mounting height requirements, refer to the Middlesex Township Subdivision and Land Development Ordinance Section under "Recreational Uses."
- l. Illumination of all building facades and/or surrounding landscapes for decorative, advertising or aesthetic purposes serving businesses, shall be extinguished automatically no later than 11:00 p.m. until dawn, except that such illumination for businesses that remain open past 11:00 p.m. is permitted while the establishment is actually open for business, and until one-half (1/2) hour after closing.
- m. Illumination of Signs and Billboards – The lighting of new or relighting of existing billboards and signs shall require a Building Permit, which shall be granted when the Township is satisfied that excessive illumination, glare, light

pollution and light trespass have been adequately mitigated, and shall be subject to the following requirements:

1. The illumination of billboards shall be limited to CH, LI and IG zoning districts and the illumination of billboards within one thousand (1000) feet of a residential use or district shall not be permitted.
 2. Illumination by Light-Emitting Diode (LED) Type Lighting- Illumination of all signs (excluding billboards) by LED type lighting shall only be permitted in the VC, CH, LI and IG districts and shall be static. Illumination of all billboards by LED type lighting shall be static. The LED output shall be automatically reduced to a brightness level that does not create glare during hours of darkness.
 3. Illumination of all signs and billboards serving businesses, shall be extinguished automatically no later than 11:00 p.m. and remain extinguished until dawn, except that illumination of all signs (excluding billboards), for businesses that remain open past 11:00 p.m. is permitted while the establishment is actually open for business, and until one-half (1/2) hour after closing.
 4. Externally illuminated signs and billboards shall have fixtures mounted at the top of the billboard or sign and aimed downward. The fixtures shall be designed, fitted and aimed to shield the source from off-site view and to place the light output onto and not beyond the sign or billboard. Lighting shall be by linear fluorescent unless it can be demonstrated to the satisfaction of the Board of Supervisors that such a mounting arrangement is not possible. At no point on the face of the sign or billboard and at no time shall the illumination exceed thirty (30) footcandles during hours of darkness.
 5. Internally illuminated signs and billboards shall have a dark field and light message. The aggregate output of the light sources shall not exceed five hundred (500) lumens per square foot of sign face per side.
 6. The use of highly reflective signage that creates nuisance glare or a safety hazard shall not be permitted.
 7. Rotating, traveling, pulsing, flashing or oscillating light sources, lasers, beacons, searchlights or strobe lighting shall not be permitted.
5. Installation.
- a. Electrical feeds for lighting standards shall be run underground, not overhead and shall be in accordance with the currently adopted Middlesex Township Building Codes.

- b. Poles supporting lighting fixtures for the illumination of parking areas and located directly behind parking spaces, or where they could be hit by snow plows or wide-swinging vehicles, shall be placed a minimum of five feet (5') outside paved area or tire stops, or placed on concrete pedestals at least thirty inches (30") high above the pavement, or suitably protected by other methods approved by Middlesex Township.
 - c. Pole mounted fixtures for lighting horizontal tasks shall be aimed straight down and poles shall be plumb/vertical.
 - d. Poles and brackets for supporting lighting fixtures shall be those specifically manufactured for that purpose and shall be designed and rated for the weights and wind loads involved.
 - e. Pole foundations shall be designed consistent with the wind loads and local soil conditions involved.
- 6. Maintenance – Lighting fixtures and ancillary equipment shall be maintained so as to always meet the requirements of this Section.
- E. Plan Submission – Where site lighting is required by this Ordinance, is otherwise required by the Board of Supervisors or is proposed by Applicant, lighting plans shall be submitted to Middlesex Township for review and approval for all Building Permit, Subdivision and Land Development, Conditional Use, Special Exception and Variance applications. The submitted information shall contain the following:
 - 1. A plan or plans of the site, complete with all existing and proposed structures, parking spaces, building entrances, traffic areas (both vehicular and pedestrian), existing and proposed trees and adjacent uses that might be adversely impacted by the lighting. The lighting plan shall contain a layout of all existing and proposed exterior lighting fixtures, including but not limited to area, architectural, building entrance, canopy, soffit, landscape, flag, sign, etc., by location, orientation, aiming direction, mounting height, lamp, photometry and type.
 - 2. A ten foot (10') x ten foot (10') illuminance grid (point-by-point) plot of maintained horizontal footcandles overlaid on the site plan, plotted out to zero-point-zero (0.0) footcandles, which demonstrates compliance with the light trespass, illuminance and uniformity requirements as set forth in this Ordinance or as otherwise required by the Board of Supervisors. When the scale of the plan, as judged by the Board of Supervisors, makes a ten foot (10') x ten foot (10') grid plot illegible, a larger grid spacing may be permitted.
 - 3. The maintenance (light-loss) factors, IES candela test-filename, lamp-lumen ratings and specific lamp manufacturer's lamp ordering nomenclature, used in calculating the presented illuminance levels.

4. Description of the proposed equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, on/off control devices, mounting heights, pole foundation details, pole protection means and mounting methods.
5. When landscaping plans are involved, they shall contain the lighting fixture locations and shall demonstrate that the site lighting and landscaping have been coordinated to minimize conflict between vegetation and intended light distribution, both initially and at vegetation maturity.
6. When requested by the Township, Applicant shall also submit a visual-impact plan that demonstrates appropriate steps have been taken to mitigate the potential consequences of on-site and off-site glare. This plan may require the inclusion of footcandle values at specific off-site venues, e.g., bedroom windows of adjacent residential uses.
7. Plan Notes – The following notes shall appear on the Lighting Plan:
 - a. Post-approval alterations to lighting plans or intended substitutions for approved lighting equipment shall be submitted to Middlesex Township for review and approval. Requests for substitutions shall be accompanied by catalog cuts of the proposed equipment and lighting plans, including a point-by-point plot, as required above, that demonstrate full compliance with the plan previously approved by Middlesex Township.
 - b. The Township reserves the right to conduct post-installation inspections to verify compliance with the Ordinance requirements and approved Lighting Plan commitments, and if deemed appropriate by the Board of Supervisors, to require remedial action at no expense to the Township.
 - c. All exterior lighting shall meet IESNA full-cutoff criteria unless otherwise specifically approved by the Board of Supervisors.
 - d. Installer shall notify Middlesex Township to arrange for inspection and approval of all exterior lighting, including building-mounted lighting, prior to its installation.

F. Residential Development Fixture Placement

1. For residential developments where lot sizes are or average less than twenty thousand (20,000) square feet, street lighting shall be provided at the following locations:
 - a. Intersections of public roads with entrance roads to the proposed development.

- b. Intersections involving proposed public or non-public major thoroughfares, including collector and arterial roads within or immediately adjacent to the proposed development.
 - c. The apex of the curve of any major-thoroughfare road, public or non-public, within the proposed development, having a radius of three hundred (300) feet or less.
 - d. Cul-de-sac bulbs.
 - e. Terminal ends of center median islands having concrete structure curbing, trees and/or other fixed objects not having breakaway design for speeds of twenty five (25) m.p.h. or greater.
 - f. Defined pedestrian crossings located within the development.
 - g. 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.
- 2. Where lot size limits the parking of less than two (2) vehicles on the residential lot, thereby necessitating on-street parking, street lighting may be required along the length of the street.
 - 3. In multi-family developments, common parking areas of five (5) spaces or greater shall be illuminated.
 - 4. In residential developments with lots of less than twenty thousand (20,000) square feet, where five (5) or more common contiguous parking spaces are proposed, such spaces shall be illuminated.
- G. Recreational Uses – The nighttime illumination of outdoor recreational facilities for such aerial sports as baseball, basketball, soccer, tennis, track and field, and football typically necessitate higher than normally allowed fixture mounting heights and aiming angles, utilize very high-wattage lamps and potentially produce unacceptable levels of light trespass and glare when located near residential properties. Permission to illuminate such facilities shall be granted only when the Board of Supervisors is satisfied that the health, safety and welfare rights of nearby property owners and the township as a whole have been properly protected. When recreational uses are specifically permitted by the Board of Supervisors for operation during hours of darkness, the following requirements shall apply:
- 1. Race tracks and such recreational venues as golf driving ranges and trap-shooting facilities shall not be permitted to be artificially illuminated unless it can be demonstrated to the Board of Supervisors that such lighting will not create a nuisance, shine on or into any residential properties or be visible to traffic on any

nearby streets, roads or institutional or commercial parking lots. In any case, illumination shall not be accomplished by using any horizontally aimed fixture or floodlights nor shall these fixtures be aimed at an angle greater than forty five degrees (45°) from the vertical.

2. Recreational facilities for basketball, baseball, football, soccer, miniature golf, tennis or track shall not be illuminated if located within a residential district or sited on a nonresidential property located within one thousand (1,000) feet of a property containing a residential use.
3. Sporting events at all recreational facilities shall be timed to end at such time that all lighting in the sports facility, other than lighting for safe exit of spectators and participants shall be extinguished by 11:00 p.m., regardless of such occurrences as extra innings or overtimes.
4. Maximum mounting heights for recreational lighting shall be in accordance with the following:

a. Basketball	20'
b. Football	70'
c. Soccer	70'
d. Little League Baseball	
(1) 200' Radius	60'
(2) 300' Radius	70'
e. Miniature Golf	20'
f. Swimming Pool Aprons	20'
g. Tennis	30'
h. Track	20'
5. To assist the Board of Supervisors in determining whether lighting will be permitted, applications for illuminating recreational facilities shall be accompanied not only with the information required under Section G. below but also by a visual impact plan that contains the following:
 - a. Plan views containing a layout of the recreational facility and showing pole locations and the location of residences on adjoining properties.

- b. Elevations containing pole and fixture mounting heights, horizontal and vertical aiming angles and fixture arrays for each pole location
- c. Elevations containing illuminance plots at the boundary of the site, taken at a height of five feet (5') line-of-sight
- d. Elevations containing illuminance plots on the windowed facades of all residences facing and adjacent to the recreational facility. Such plots shall demonstrate compliance with the light trespass and glare control requirements of this Ordinance.
- e. Proposed frequency of use of the facility during hours of darkness on a month-by-month basis and proposed time when the sports lighting will be extinguished.
- f. A narrative describing the measures proposed to achieve minimum off-site disturbance.

H. Street Lighting Dedication

- 1. When street lighting is proposed to be dedicated to the Township, the Applicant shall be responsible for all costs involved in the lighting of streets and street intersections until such time as the streets and street lighting are accepted by the Township for dedication.
- 2. Prior to dedication and acceptance of any street lighting by the Township, in the event of the formation of a homeowners' association or other ownership association, the Board of Supervisors shall require the declarant and/or association to enter into an agreement for the payment of and guaranty of the payment of all costs associated with street lighting to be dedicated. Such costs shall include, but not be limited to, the Township's administrative costs, collection costs, insurance costs, electrical utility charges, maintenance, repair and replacement costs for fixtures, standards, poles and associated equipment. The agreement shall include a provision allowing the Township to assess the declarant, the association and/or each individual property, as the case may be necessary and appropriate, to collect all of the above-referenced costs and expenses. All costs associated with the establishment of the agreement and the establishment of any lighting district necessary to implement the provisions of this paragraph shall be paid by the Applicant, declarant or association, as the case may be.

SECTION 2: Article XIV of the Middlesex Township Zoning Ordinance is hereby amended to provide for and include the following new Section therein:

SECTION 14.54 – OUTDOOR LIGHTING.

- A. The provisions of Section 711, Outdoor Lighting and Design Standards, of the Middlesex Township Subdivision and Land Development Ordinance, are incorporated by reference in this Section 14.54 in their entirety and made a part of the Zoning Ordinance and shall be applicable to all outdoor lighting installed and/or replaced in the Township of Middlesex after the effective date of this Zoning Ordinance Section, which lighting is not associated with any activity for which subdivision and/or land development plan approval would be required. Accordingly, any relief from the provisions of this Section and the provisions of Section 711 of the Middlesex Township Subdivision and Land Development Ordinance incorporated herein, may only be granted by a variance approved by the Middlesex Township Zoning Hearing Board in accordance with the procedures and standards set forth in this Zoning Ordinance.
- B. Any lighting fixture or lighting installation existing on the effective date of this Zoning Ordinance Section that does not conform with the requirements of Section 711 of the Middlesex Township Subdivision and Land Development Ordinance shall be considered nonconforming.

A nonconforming lighting fixture or lighting application shall be made to conform with the requirements of Section 711 of the Middlesex Township Subdivision and Land Development Ordinance when:

- 1. It is deemed by the Board of Supervisors to create a safety hazard;
- 2. It is replaced by another fixture or fixtures or is abandoned or relocated;
- 3. The number of fixtures is increased by fifty percent (50%) or more with conforming lighting fixtures; or
- 4. There is a change in use on the property where the nonconforming lighting fixture or lighting installation exists.

SECTION 3: Except only as amended, modified and changed herein the Middlesex Township Subdivision and Land Development Ordinance and the Middlesex

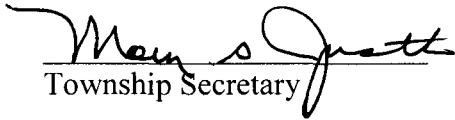
Township Zoning Ordinance as originally enacted and as previously amended shall remain in all other respects in full force and effect.

SECTION 4: If any section, sub-section, provision, regulation, limitation, restriction, sentence, clause, phrase or word in this Ordinance is declared by any reason to be illegal, unconstitutional, or invalid by any court of competent jurisdiction, such decision shall not effect or impair the validity of this or the Middlesex Township Subdivision and Land Development Ordinance or the Middlesex Township Zoning Ordinance as a whole, or any other section, sub-section, provision, regulation, limitation, restriction, sentence, clause, phrase, word or remaining portion of this Ordinance or the Middlesex Subdivision and Land Development Ordinance or the Middlesex Township Zoning Ordinance.

SECTION 5: This Ordinance shall become effective in accordance with applicable law.

ORDAINED AND ENACTED this 5th day of November , 2008.

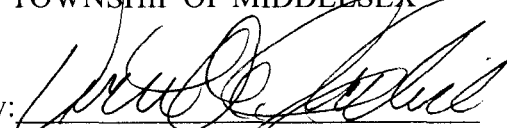
ATTEST:


Township Secretary

(Township Seal)

TOWNSHIP OF MIDDLESEX

By:


Chairman, Board of Township
Supervisors