

# OUTDOOR LIGHTING ORDINANCE GUIDE

The Eatontown, NJ, Ordinance has been used to develop the "Model Outdoor Lighting Ordinance" exhibited in this guide. The original ordinance was adopted in 1993, "Establishing Rules, Regulations and Standards Governing the Use of Lands Regarding Lighting". This Chapter, applicable to all new and replacement lighting, has been revised in February, 2006, to more clearly define regulating electric utility floodlights.

A second ordinance that applies to all existing outdoor lighting, whenever installed, was adopted in March, 2006. This Chapter, which was combined with the existing Noise Ordinance, has been renamed "Noise and Glare Nuisances". The Ordinance is intended to remove any direct glare source that can be potentially hazardous when viewed from roadways, other business properties or can be offensive to occupants of residential properties, in order to provide an environment free of any such existing invasive nuisances.

We think the Eatontown ordinances are a realistic and effective approach to anti-light pollution regulations for most suburban and city-like areas. This Guide is closely aligned with the recommendations of the New Jersey Light Pollution Study Commission's Report, as well as guidelines provided by the Illuminating Engineering Society of North America (IES).

A more rural locality may wish to consider other alternatives for some sections of an ordinance. This guide will try to provide some of those options. It will also attempt to explain how light pollution can be controlled in a way that is reasonable and acceptable to virtually everyone, as well as share some of our experiences in administering the ordinance.

## 1. Street Lighting

### A. Continuous Street Lighting

Eatontown is a fairly dense suburban municipality. All of its roadways, including local residential streets have continuous lighting. This is preferred by most of its residents. All new and replacement streetlights will be cutoff luminaires that will not exceed IES illuminance recommendations.

### B. Partial Street Lighting

Less densely populated areas may not want continuous lighting on local residential streets, or may want lower levels of lighting than the IES recommends on such streets. This would not be in conflict with an IES Committee report that stated:

*"There certainly are conditions where lighting may not reduce night accidents. Perhaps the best example is the local residential subdivision street. The greatest benefit found by urban street lighting relates to night pedestrian accidents, and very few such conflicts occur on local residential streets. A finding that lighting does not necessarily reduce*

*night accidents on such streets is understandable. Furthermore, the lighting of such streets is mostly aimed at personal security."*<sup>1</sup>

More rural municipalities, even on main roads, may only require lights at intersections or for potential hazards like sharp curves. The IES states:

*"Partial lighting consisting of one or several luminaires may cause adaptation problems in night driving, particularly when a driver is leaving or entering the lighted area. Therefore, luminaires with glare control should be used."*<sup>2</sup>

Another consideration in such places would be the use of reflective signs and markers. These can also work well when appropriately applied. In addition, for some local residential and collector streets, other traffic calming devices such as speed-bumps can be effective.

### C. Decorative Street Lighting

Decorative street lighting such as colonial, Victorian and other ornamental styles should also utilize cutoff designs to avoid unnecessary glare. These fixtures tend to be installed at lower mounting heights, and if they are not cutoff types or near equivalent, will more likely cause glare to appear within a driver's line of sight.

In order to meet IES illuminance recommendations, decorative streetlights mounted at lower heights will generally require closer spacing resulting in higher costs than more conventional cutoff cobra-head types that are mounted higher.

## 2. Pole Heights

Some ordinances have pole height limits such as 25 or 30 feet. This can be ideal for most small to medium size parking lots. Very large facilities such as Eatontown's regional Monmouth Mall, with over 100 acres of outdoor parking space, required higher poles to minimize cost. The new lighting utilized mostly 50 foot high poles. To avoid light trespass problems, those luminaires near roadways and residential areas required shields or 30 foot poles.

## 3. Cutoff Light Fixtures

Utilizing cutoff (shielded) light fixtures will help prevent glare, the worst form of light pollution. The luminaire choices are many, between cutoff, semi-cutoff and non-cutoff fixtures, and lighting designers should choose wisely to avoid glare since it "veils" our ability to see all of the useful light. With glare, we do in a sense waste energy to produce light that we cannot fully see. The IES defines three levels of glare: "Blinding", "Disability" and "Discomfort". Even Discomfort glare, the lowest of the three glare levels, should be avoided. It "*may cause fatigue, which results in driver error*", says the IES.<sup>3</sup> The vision of police officers patrolling areas at night can be impeded by such unnecessary light spillage. During inclement weather conditions, with foggy or salt sprayed windshields, glare can become even more dangerous. It can also create a hostile nighttime environment for many forms of wildlife. Low flying birds as well as

other wildlife can become confused and disoriented, having their ultra-sensitive ability to see in the dark dangerously hindered.

For parking lots, pole mounted luminaires with a flat clear lens at the bottom of each fixture, are usually the best types for avoiding glare. There are some fixtures with a slight sag shape lens at the bottom, into which a part of the lamp projects. The amount of projection should be minimal, otherwise such fixtures may cause too much glare especially at a higher lamp wattage. Planning boards should have an applicant exhibit one of the fixtures (illuminated), at the proposed height, to determine if there will be light trespass problems before approval is granted.

Floodlights can be acceptable in the Eatontown ordinance provided they are made truly cutoff equivalent or, if used for building exteriors or landscape lighting, when 90 percent of the light is restricted to the target area. This can be done by utilizing visors and with proper positioning. Some ordinances prohibit the use of floodlights in parking lots or when mounted to the wall of a building. Most wall-pack type luminaires are unacceptable unless they also are fully cutoff designs.

Non-cutoff luminaires can sometimes be used at very low lumen levels (900 or below) without causing serious glare problems.

#### **4. Illuminance Levels**

The NJ State Commission's Report advised (Recommendation #1):

*"Nationally recognized lighting recommendations for illuminance levels and uniformity ratios should be followed, such as contained in the Illuminating Engineering Society of North America Lighting Handbook."* <sup>4</sup>

IES Lighting Ready Reference and their other publications also contains this information.

##### **A. Parking Lots**

The previous IES parking lot illuminance recommendations, which have been in effect for over 15 years, were based on three levels of activity: *"High"* *"Medium"* and *"Low"*. These were applied to specific types of uses. The current IES illuminance recommendations, are now based on two levels: *"Basic"* and *"Enhanced Security"*. The new recommendations are less complicated and easier to enforce. "Schedule A" of the model ordinance contains the revised recommendations. <sup>5</sup>

The IES illuminance levels will perform the lighting task safely, without wasting energy. The IES feels that the Enhanced Security illuminance recommendations will more than adequately provide for facial identifications in problem crime areas.

Excessive levels of light, even with cutoff fixtures, can also cause visual adaptation problems for drivers when passing from exorbitant to normal levels of light. Some businesses seem to intentionally over-illuminate and project bright glary light onto the roadway, to attract the attention of possible customers in passing vehicles. Such potentially dangerous conditions must be avoided. Below and above certain levels of

lighting humans do not feel comfortable, just as with temperature and noise levels. Over-lighting can be as bad or worse than under-lighting. No one should believe anymore that the more light the better.

#### B. Security Lighting After Business Hours

For typical business parking lots, after active hours, illuminance should be no greater than the IES recommendation for property security lighting. This can be done by allowing certain pole mounted lights at critical locations to remain illuminated. Some businesses choose to shut off most or all pole mounted luminaires and only allow cutoff wall mounted lights around buildings to remain on. This can be very effective. The IES provides appropriate illuminance recommendations for active and inactive entrances and building surrounds. Even automobile dealers should follow these guidelines. Motion sensor activated lighting can also provide good security, by acting as visual alarms, startling intruders and alerting those nearby. At some rural school facilities, there have even been reports that shutting off all lights has reduced vandalism.

#### C. Other Outdoor illuminance

IES Lighting publications provide excellent recommendations for many outdoor lighting applications.<sup>4,5,6,7,8</sup>

## 5. Lamp Source & Color

The following lamps are the most energy efficient of the popular types used for outdoor lighting: Low Pressure Sodium (LPS), High Pressure Sodium (HPS) and Metal Halide (MH).

A. LPS with its deep yellow illumination, although the most energy efficient, does not provide any color rendition alone. All colors appear as varying shades of yellow/grey unless mixed with other "white" lamp sources.

B. HPS illumination provides some color rendering and is commonly used for street lighting, parking lots and security lighting.

C. MH with its white illumination offers the best color rendition. As a result, it is widely used by automotive dealers, for sports lighting and other uses when color discernment is critical. Recent studies seem to suggest that MH light improves peripheral (off-axis) vision and reaction time, when compared with HPS light. This however, appeared to only apply under very low levels of light. For some parking lot lighting conditions, such as the "Enhanced Security" illuminance level that the IES recommends, there was no appreciable difference.<sup>6</sup>

Other factors should be considered regarding the choice of lamps. The use of MH over HPS, at similar lumen levels, can increase energy costs by almost 30 percent. Also, MH will increase maintenance costs, since lamp life is usually less than HPS.

## **6. Signs, Facade and Landscape Lighting**

At the time the ordinance was adopted in Eatontown, it was felt that illuminated signs did not significantly contribute to light pollution, and therefore, are only regulated to prevent exceeding IES illuminance/luminance recommendations. An option to consider for internally illuminated signs would be to require that background colors be darker than the lettering or designs. Also, some ordinances have curfews for non-essential sign lighting.

For billboards, top mounted lighting works well in controlling light pollution. Some frame-less billboards are unable to support top mounted luminaires. When bottom mounted lights are used, at least 90 percent of the illumination should be restricted to the sign area.

Facade and landscape lighting should be reduced to a property security level at some reasonable time after the close of business.

## **7. Recreational Lighting <sup>7</sup>**

The Eatontown ordinance requires that recreational lighting should not be allowed to cause light trespass, as defined therein, and that this provides sufficient protection. Other jurisdictions may wish to include more detailed specifications such as pole heights, setbacks, curfews and other considerations to control sports lighting.

In Eatontown, the lighting of a golf driving range and putting facility was illuminated at light levels well below IES recommendations, because of its proximity to a residential area. Nearby property owners, as well as facility patrons, were satisfied with this innovative installation that significantly minimized light pollution. Municipalities may wish to consider two separate lighting recommendations for the future. One for brightly lighted "main-street" vacation resort areas and another for areas with residential dwellings nearby.

## **8. Light Trespass**

### **A. Resident to Resident**

A resident to resident section was considered for the Eatontown ordinance, but since it was not a serious enough problem at the time, was not included. However, if the problem does intensify, it could be reviewed again in the future to include "one or two family dwellings". This section would only apply when an offended resident registers a formal complaint. Another approach is to provide written guidelines that residents can voluntarily follow. A local environmental group could become involved in such a process.

### **B. Business to Resident**

The illuminance from a typical 150 watt reflectorized incandescent floodlight at a distance of 100 feet can be 0.1 vertical footcandles, when facing almost full. Illuminance

above this level was considered unacceptable when viewed from residential properties. Some luminaires when mounted close to residential property) even with cutoff designs, might still require shielding accessories to prevent light trespass. In Eatontown, a three member committee of the Planning Board resolved a residential complaint concerning objectionable direct glare visible from several nearby 50 foot high cutoff luminaires. This was easily corrected by installing inexpensive external shields.

#### C. Business to Business

A vertical footcandle maximum could be included as an option. If so, a higher limit of one or two footcandles, at a height of 5 feet could be considered appropriate.

### **9. Site Plan Submission Details**

Prior to adopting the ordinance, the outdoor lighting portion of site plan submission details were seriously lacking. An illuminance grid showing point readings and the computed average was not provided. Most applicants and their representatives appeared unfamiliar with the IES recommendations and the consequences of inappropriate lighting. Now through simple analysis of the details required by ordinance, and discussion with the designers and installers of the lighting, potential problems and complaints are avoided before any physical work actually begins.

One of the important submission requirements in the ordinance is to provide catalog information for the proposed light fixtures. Such information may vary between manufacturers. An important detail to look for is the vertical cutoff angle. It should not exceed 90 degrees above nadir (sometimes referred to as the visual horizon). Other useful information is the percent of upward lumen output above the 90 degrees. It should be "0" or close to it.

Construction Officials who issue electrical permits should be alerted to review plans for minor lighting installations. Manufacturers catalog details should be sufficient for just one or two luminaires. Even for simple residential installations, an information sheet should be given to permit applicants, informing them about how to avoid light pollution. This is still advisable even though residential property may not be subject to the ordinance.

### **10. Electric Utility Floodlights**

These floodlights are mounted on wooden power-line poles and billed at a fixed monthly rate to businesses and other customers. Some of these luminaires were improperly installed in Eatontown, and elsewhere, causing unnecessary glare and light spillage. We have been working with Jersey Central Power & Light (JCP&L) making adjustments that will comply with the ordinances.

The Eatontown Borough Attorneys have reviewed the Board of Public Utilities (BPU) State Tariff that has authorized the floodlight program and have concluded the following.

A. The question was raised whether JCP&L can use the public right-of-way to

illuminate the private property of individuals at their request. It was determined that JCP&L, like any other utility, cannot use the public easement for profit to benefit private individuals without the permission of the Borough of Eatontown.

B. The BPU Tariff states: "*This service is not available for the lighting of public streets and highways. This service is also not available where, in the Company's judgement, it may be objectionable to others, or where, having been installed, it is objectionable to others.*"<sup>9</sup>

Most inappropriately installed floodlights can be easily adjusted to comply with the ordinance by the addition of external visors and with proper repositioning.

## **11. Special Security Considerations**

IESNA publication G-1-03 provides guidelines for special security requirements, and contains the following Note "*...that throughout this guideline the phrase when security is an issue is used to differentiate the lighting design suggestions presented herein from those contained in other IESNA publications. While these other publications may make reference to security, in G-1 it is the only issue. Note too that when security is an issue, not only lighting but all measures and system components are increased and/or strengthened; for example, personnel, surveillance, gates, locks, and fences.*"

Section 7.2.1 of G-1-03 also states: "*While IESNA does not recommend designing lighting systems with disability glare, the technique is sometimes used in special security lighting applications to protect a secure area. The glare renders would-be intruders outside the protected area highly visible to guards inside the perimeter.... Typical applications of this principle include sensitive weapons storage facilities, prisons, and jails. This technique has a high probability of producing light-trespass and light pollution problems, and should be considered only in extreme cases, or those instances where facility security is a very high priority. In addition, it can only be effective if the would-be intruders approach from the unprotected side, and when security personnel are positioned on the inside of the installation.*"

It should be stated that G-1-03 also clearly emphasizes the importance of minimizing glare and utilizing reasonable levels of light. The above information should not be taken or used out of context to imply that glare and excessive light levels need not be avoided. In New Jersey, there have been complaints from nearby residents that some facilities such as schools have grossly overreacted to Homeland Security concerns with unnecessary high levels of glary light.

## **12. Conclusion**

Lighting regulations based on the above measures, in one form or another, can be "tailor-made" to meet local requirements for reducing light pollution. This can even apply to already existing over-lighted glittery resort areas. These vicinities could be exempt from illuminance restrictions. But, outside of the "downtown" area, more normal levels of lighting could still be enforced. By reducing glare, roadway safety and overall security can be improved. By enforcing effective lighting, energy waste, clutter and obtrusive light

spillage can be avoided. The nighttime environment will become less hostile to birds and other wildlife. Unnecessary sky glow will also be reduced. Perhaps then, even the Milky Way might become visible once again from some suburban areas.

# MODEL OUTDOOR LIGHTING ORDINANCE

(Applies to new and replacement lighting)

## Section 1 - Definitions

**Glare:** The sensation produced by luminance 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 and visibility.

**IESNA:** Illuminating Engineering Society of North America. An organization that recommends standards for the lighting industry.

**Light Trespass:** Any form of artificial illuminance emanating from a light fixture or illuminated sign that penetrates other property and creates a nuisance, as specified in Section 3.

**Objectionable Direct Glare Source:** Glare resulting from excessive levels of illumination or insufficiently shielded light sources emanating from light fixtures in the field of view where the lens, lamp or reflector is offensively visible above a height of five (5) feet at a property line or a public roadway.

**Outdoor Light Fixture:** An electrically powered illuminating device containing a total light source of more than 1800 initial lumens per fixture or any spot or flood luminaire with a reflector contained in the lamp component such as a parabolic aluminized reflector (PAR) lamp, of more than 900 initial lumens, which is permanently installed outdoors, including but not limited to, devices used to illuminate any site, architectural structure, or sign.

**Shielded Light Fixture:** A light fixture with cutoff optics that allows no direct light emissions above a vertical cutoff angle of 90 degrees above nadir (straight down at perfect vertical), through the light fixture's lowest light emitting part. Any structural part of the light fixture providing this cutoff angle must be permanently affixed.

## Section 2 - Outdoor Lighting

**Section 2.1 - Purpose:** The governing body of the (Municipality/County) does herein find that regulation of outdoor lighting in the (Municipality/County) is necessary to prevent misdirected or excessive artificial light, caused by inappropriate or misaligned light fixtures that produce glare, light trespass (nuisance light) and/or unnecessary sky glow; and also that such regulation is necessary to discourage the waste of electricity and to improve or maintain nighttime public safety, utility and security.

**Section 2.2 -** All outdoor light fixtures installed and thereafter maintained other than those serving one and two family dwellings, shall comply with the requirements as

specified below:

A. Where used for security purposes or to illuminate walkways, roadways and parking lots, only shielded light fixtures shall be used.

B. Where used for commercial and industrial purposes such as in merchandise display areas, work areas, platforms, signs, architectural, landscape or sports or recreational facilities, all light fixtures shall be equipped with automatic timing devices and comply with the following:

1. Light fixtures used to illuminate flags, statues or any other objects mounted on a pole, pedestal or platform, shall use a narrow cone beam of light that will not extend beyond the illuminated object.

2. Other upward directed architectural, landscape or decorative direct light emissions shall have at least ninety (90) percent of their total distribution pattern within the profile of the illuminated structure.

3. Recreational and sports facility lighting shall be shielded whenever possible. Such lighting shall have directional and glare control devices, when necessary, to comply with Section 3.

4. Externally illuminated signs including commercial billboard, building identification or other similar illuminated signs, shall comply with the following:

(i) Top mounted light fixtures shall be shielded and are preferred.

(ii) When top mounted light fixtures are not feasible, illumination from other positioned light fixtures shall be restricted to the sign area. Visors or other directional control devices shall be used to keep spill light to an absolute minimum.

5. All other outdoor lighting shall use shielded light fixtures.

C. All floodlight type fixtures, once properly installed, shall be permanently affixed in the approved position.

D. Foundations supporting lighting poles not installed four (4) feet behind the curb, shall not be less than 24 inches above ground.

E. When fifty percent or more of existing outdoor light fixtures are being replaced or modified, then all lighting must be made to conform to the provisions of this lighting ordinance.

### **Section 3 - Light Trespass (Nuisance Light)**

All light fixtures, except street lighting, shall be designed, installed and maintained to prevent light trespass, as specified in A and B below.

A. At a height of five (5) feet above the property line of subject property,

illuminations from light fixtures shall not exceed 0.1 footcandles in a vertical plane on residentially zoned property.

B. Outdoor light fixtures properly installed and thereafter maintained, shall be directed so that there will not be any objectionable direct glare source visible above a height of five feet from any property or public roadway.

Note: Light fixtures near adjacent property may require special shielding devices to prevent light trespass.

#### **Section 4 - Illuminance and Luminance Requirements**

Illuminance and luminance requirements shall be as set forth in the current editions of the IESNA Lighting Handbook and other IESNA publications and this ordinance shall adopt those standards.

A. Street lighting - Average IESNA illuminance recommendations should not be exceeded. IESNA average to minimum illuminance uniformity ratios are to be used as a guide for designing safe and adequate roadway lighting.

B. Outdoor Parking Facilities - Outdoor parking lot illuminance shall be based on certain illuminance specifications recommended by the IESNA, as contained in Schedule A.

C. All other illuminance uses shall not exceed IESNA recommendations.

D. Internally illuminated signs shall not exceed IESNA luminance recommendations

#### **Section 5 - Electric Utility Floodlights**

A. No electric utility floodlight intended for property illumination shall be located within the public right-of-way on any public roadway or on any property unless:

1. The luminaire is sufficiently shielded and aimed so that no objectionable direct glare source is visible at any point on the roadway where the viewing height is five feet or greater and when the distance from the mounting pole is seventy feet or greater.

2. The property being illuminated does not exceed the maximum maintained illuminance levels to perform the lighting task prescribed in Section 4 - Illuminance and Luminance Requirements, of this ordinance.

3. All electric utility floodlights shall be subject to the requirements in Section 3 - Light Trespass (Nuisance Light), of this Ordinance.

#### **Section 6 - On Site Outdoor Lighting Energy Conservation**

The design and installation of outdoor lighting on the site of a subdivision or site plan shall be constructed so as to conform to the standards specified herein.

A. All outdoor lighting not necessary for security purposes shall be reduced, activated by motion sensor devices or turned off during non-operating hours. Illuminated signs are excluded from this requirement.

B. All lighting shall be designed to prevent misdirected or excessive artificial light and to maximize energy efficiency.

### **Section 7- Submission of Plans**

Submission of plans and evidence of compliance shall include the following:

A. Description of outdoor light fixtures including component specifications such as lamps, reflectors, optics, angle of cutoff, supports, poles and include manufacturers catalog cuts.

B. Locations and description of every outdoor light fixture and hours of operation.

C. Maintained horizontal illuminance shown as footcandles (after depreciation).

1. Maximum

2. Minimum

3. Average, during operating and non-operating hours.

4. Average to minimum uniformity ratio.

D. Computer generated photometric grid showing footcandle readings every ten (10) feet and the average footcandles.

E. Foundation details for light poles.

F. When not using IESNA recommendations, submit reasons and supply supporting documentation.

### **Section 8 - Prohibitions**

Searchlights or flashing or animated signs is prohibited, other than for a period of seven (7) days from the date of the opening of a new establishment.

### **Section 9 - Enforcement**

A. Violation of any provision of this chapter shall be cause for an enforcement document to be issued to the violator by the (Municipality) Special Code Enforcement Officer or the other official or enforcing agency designated by the Mayor and Council. The recipient of an enforcement document shall be entitled to a hearing in Municipal Court having jurisdiction to contest such action.

B. Any person who violates any provision of this chapter shall be subject to a civil penalty for each penalty of not more than \$1,250.00; imprisonment for a term not exceeding 90 days, a period of community service not exceeding 90 days, or any combination thereof. If the violation is of a continuing nature, each day during which it occurs shall constitute an additional, separate and distinct offense.

C. No provision of this chapter shall be construed to impair any common law, statutory or regulatory cause of action or legal remedy there from, or any personal injury or damage arising from any violation of this chapter or from other law.

## SCHEDULE A

### Maintained Illuminance for Parking Lots

	Basic	Enhanced Security
Horizontal Illuminance		
Minimum	0.2 fc	0.5 fc
Average	1.0 fc	2.5 fc
Uniformity Ratios		
Average to Minimum	5:1	5:1
Maximum to Minimum	20:1	15:1
Minimum Vertical Illuminance	0.1 fc	0.25 fc

1. Minimum horizontal illuminance shall be no lower than 0.2 fc.
2. Average horizontal illuminance shall not exceed 2.5 fc.
3. Uniformity ratios are to be used as a guide.
4. Minimum vertical illuminance shall be measured at 5.0 feet above parking surface at the point of lowest horizontal illuminance, excluding facing outward along boundaries.
5. For typical conditions. During periods of non-use, the illuminance of certain parking facilities should be turned off or reduced to conserve energy. If reduced lighting is to be used only for the purpose of property security, it is desirable that the minimum (low Point) not be less than 0.1 hfc in susceptible areas of the property. Reductions should not be applied to facilities subject to intermittent night use, such as apartments, hospitals and active transportation areas.
6. If personal security or vandalism is a likely and/or severe problem, an increase above the Basic level may be appropriate.
7. High vehicular traffic locations should generally require the Enhanced Level of illumination. Exits, entrances, internal connecting roadways and such would be some examples.
8. Increasing the above illuminance is not likely to increase safety and security. Variance requests for higher levels will generally be for "retail" reasons and should not be granted unless shown to be necessary and at an average illuminance not to exceed 3.6 fc.

Certain data above has been summarized from IESNA RP-20-98, titled "Lighting for Parking Facilities".

# MODEL GLARE NUISANCE ORDINANCE

(Applies to any existing lighting)

## Section 1 - Definitions

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

**Objectionable Direct Glare Source:** Glare resulting from excessive levels of illuminance or insufficiently shielded light sources emanating from light fixtures in the field of view where the lens, lamp or reflector is offensively visible above a height of five (5) feet at a property line or a public roadway.

**Special Code Enforcement Officer:** Shall be the officer designated by separate Ordinance to enforce all aspects of this Chapter involving glare nuisance.

## Section 2 - Applicability

This chapter as it applies to glare nuisance shall be applicable to the following property categories:

- A. Industrial facilities
- B. Commercial facilities
- C. Public service
- D. Community service facilities
- E. Multi-use properties
- F. Public and private rights-of-way
- G. Public spaces
- H. Multi-dwelling unit buildings

## Section 3 - Declaration of Findings and Policy

Whereas an objectionable direct glare source can be potentially hazardous to motorists, cyclists or pedestrians by causing discomfort and fatigue or reducing vision especially with the aged, and whereas such direct glare can also affect performance by distracting attention, and whereas the people have a right to, and should be ensured of, an environment free of any such existing invasive nuisance. Now therefore, it is the policy of (municipality) to prevent any such existing objectionable glare as follows:

A. Light fixtures in the categories set forth in Section 2 - Applicability, of this Ordinance regarding outdoor lighting, which cause an objectionable direct glare source to be visible above a height of five (5) feet from streets or parking lots within the field of view of motorists, cyclists or pedestrians, shall be either shielded or repositioned within ninety (90) days of notification to avoid any potential hazard to such motorists, cyclists or pedestrians.

B. Light fixtures in the categories set forth more fully in Section 2 - Applicability, of this Ordinance regarding lighting which causes an objectionable direct glare source to be visible above the height of five (5) feet from residential properties that is offensive to the occupants of such properties by being in violation of the standards set forth in Section 3 - Light Trespass (Nuisance Light) of the MODEL OUTDOOR LIGHTING ORDINANCE, which provides that all light fixtures, except street lighting and those used on one or two family dwellings shall not provide illuminations exceeding 0.1 foot candles in a vertical plane on residentially zoned property, and shall not be installed and/or maintained in such a way as to produce an objectionable direct glare source to be visible above the height of five (5) feet from any property or public roadway. In such cases, property owners shall be notified to shield or reposition light fixtures within ninety (90) days of notification.

C. All existing electric utility floodlights utilized for illumination on the property categories listed in Section 2 - Applicability, of this Ordinance, shall be subject to Section 5 - Electric Utility Floodlights, of the MODEL OUTDOOR LIGHTING ORDINANCE, in that such light fixtures must be sufficiently shielded and aimed so as to not allow an objectionable direct glare source to be visible at any point on the roadway where the viewing height is five (5) feet or greater and when the distance from the mounting pole is seventy (70) feet or greater. Maximum maintained luminance levels must be as prescribed by Section 4 - Illuminance and Luminance Requirements, of the MODEL OUTDOOR LIGHTING ORDINANCE and all electric utility floodlights shall be subject to the requirements of Section 3 - Light Trespass (Nuisance Light) of the MODEL OUTDOOR LIGHTING ORDINANCE. When existing floodlights are found to be non-compliant, the electric utility and property owner shall be notified to make corrections within ninety (90) days of notification.

### **Section 3 - Enforcement:**

A. Violation of any provision of this Chapter involving glare or light nuisance shall be cause for an enforcement document to be issued to the violator by the Special Code Enforcement Officer. The recipient of an enforcement document shall be entitled to a hearing in municipal court having jurisdiction to contest action.

B. Any person, firm or corporation violating any of the provisions of this Chapter shall, upon conviction, be subject to a fine not exceeding One Thousand Two Hundred and Fifty Dollars (\$1,250.00), a term of imprisonment not exceeding ninety (90) days, or a period of community service not exceeding ninety (90) days, or a combination thereof.

C. No provision of this Chapter shall be construed to impair any common law or statutory cause of action, or legal remedy there from, of any person for injury of damage arising from any violation of this chapter or from other law.

## References

<sup>1</sup> Illuminating Engineering Society of North America (IESNA) CP-31-1989, *Value of Public Roadway Lighting*

<sup>2</sup> IESNA RP-8, *Roadway Lighting*, (1983 edition)

<sup>3</sup> IESNA RP-8-00, *Roadway Lighting*

<sup>4</sup> IESNA HB-9-00, *Lighting Handbook*, 9<sup>th</sup> edition

<sup>5</sup> IESNA RP-20-98, *Lighting for Parking Facilities*

<sup>6</sup> IESNA RP-33-99, *Lighting for Exterior Environments*

<sup>7</sup> IESNA RP-6-01, *Sports and Recreational Area Lighting*

<sup>8</sup> IESNA DG-9-97, *Lighting for Automated Teller Machines*

<sup>9</sup> New Jersey Board of Public Utilities Tariff: BRC No. 7, Electric - Part III, Docket No. AX 1111712, OL Outdoor Lighting Service dated 12/30/92

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