

## **Chapter XXX. Outdoor Lighting Standards.**

**A. Purpose:** The Village of Cornwall on Hudson has enacted this ordinance to regulate the installation of outdoor lighting in order to achieve the following purposes:

- (1.) To provide standards for outdoor lighting;
- (2.) To promote energy efficient and sustainable lighting practices and luminaires;
- (3.) To minimize adverse off-site impacts from new and existing lighting installations;
- (4.) To permit reasonable uses of outdoor lighting for safety, utility, security, productivity, commerce and enjoyment;
- (5.) To minimize glare;
- (6.) To avoid impacts on nearby residential properties, and
- (7.) To reduce atmospheric light pollution.

### **B. Definitions.**

#### **FOOTCANDLE (FC)**

A unit of illuminance amounting to one lumen per square foot.

#### **FULLY SHIELDED FIXTURE**

An outdoor lighting fixture that, by design of the housing, does not allow any light dispersion or direct glare to shine above a ninety-degree, horizontal plane from the base of the fixture. Fully shielded fixtures must be installed in a horizontal position as designed, or the purpose of the design is defeated, and direct glare will result.

#### **LIGHT, FULLY SHIELDED**

Fully shielded luminaire light fixture which can control the glare in any direction.

#### **GLARE**

The eye's line-of-sight contact with a direct light source that causes annoyance, discomfort, or loss in visual performance and ability.

#### **HEIGHT OF THE LUMINAIRE**

The height of the luminaire shall be the vertical distance from the ground directly below the center line of the luminaire to the lowest direct-light-emitting part of the luminaire.

#### **ILLUMINANCE**

Density of luminous flux incident on a surface. Unit is foot-candle or lux.

#### **ILLUMINATING ENGINEER SOCIETY OF NORTH AMERICA (IESNA)**

The Illuminating Engineering Society of North America, is a nonprofit organization that develops and publishes standards regarding lighting. Headquartered in New York City, United States, IESNA standards are in effect throughout all of North America with its nearly 8,000 members. Internationally, IESNA collaborates with the International Commission on Illumination to promote uniformity with the rest of the world.

**LUMINAIRE**

A complete lighting system, including a light source component (lamp or lamps that produce the actual light) and a fixture.

**LUX**

One lumen per square meter; unit of illuminance.

**OUTDOOR LIGHTING**

The nighttime illumination of an outside area or object by any man-made device located outdoors that produces light by any means.

**OUTDOOR LIGHTING FIXTURE**

An electrically powered illuminating device or other outdoor lighting fixture, including all parts used to distribute the light and/or protect the lamp, permanently installed or portable, used for illumination or advertisement. Such devices shall include, but are not limited to, search, spot, flood, and area lighting for buildings and structures; recreational areas; parking lot lighting; landscape lighting; signs (advertising and other); street lighting; product display area lighting; building overhangs, and open canopies.

**RECESSED CANOPY FIXTURE**

An outdoor lighting fixture recessed into a canopy ceiling so that the bottom of the fixture is flush with the ceiling.

**UPLIGHTING**

Any light source that distributes illumination above a ninety-degree horizontal plane.

**WALLPACK FIXTURES**

A lighting unit designed for direct mounting on building walls whose primary function is to light building exteriors.

**C. Applicability**

**1. Single Family/Two Family Residence.**

a. Existing Installations. All existing outdoor lighting on a structure and /or property devoted exclusively to single- and two-family residential use, installed prior to the effective date of this ordinance, shall be exempt from the provisions of this ordinance.

b. Replacement, Modification, or Refurbishment of Existing Installations, Including Bulb Replacements. All existing outdoor lighting on a structure and/or property devoted exclusively to single and two family residential use which is replaced, modified, refurbished, retrofitted and/or installed, including the replacement of light bulbs, after the effective date of this ordinance, shall be the minimum necessary, in both number of luminaires and intensity of light, to achieve the intended purpose of the lighting, and shall meet the standards as provided in Sections F, G and H.

c. **Additions, Improvements, Alterations and Addition of New Fixtures.** All outdoor lighting, including lighting and/or light fixtures as part of an addition, modification, alteration or otherwise, on a structure and/or property devoted exclusively to single- or two-family residential use, installed after the effective date of this ordinance shall conform to the standards set forth in Section F, G and H.

**2. Other Than Single Family/Two Family Residences.**

a. Existing Installations. All existing outdoor lighting installed on a structure and /or property devoted exclusively to OTHER THAN single- and two-family residential use, shall comply with the provisions of this ordinance within the time period required by Section J herein.

b. Replacement, Modification, Refurbishment of Existing Installations, Including Bulb Replacement or Improvements, Alterations and Addition of New Fixtures. All existing outdoor lighting on OTHER THAN single- and two-family structures and/or property, which is replaced, modified, refurbished, retrofitted and/or installed and any additions, improvements, alterations and/or installation of new fixtures, installed after the effective date of this chapter, shall meet the standards as provided in Section F, G and H.

**D. Required submittals for projects requiring site plan review.**

1. Site Plan Approval. An applicant for any work involving outdoor lighting fixtures that requires site plan approval shall submit, as part of the application, evidence that the proposed work shall comply with this section. In addition, the Village's Code Enforcement Officer, in his or her sole discretion, may refer an applicant for any work involving outdoor lighting fixtures governed by this section occurring in areas of the Village covered by the View Preservation District to the Village Planning Board for site plan approval with respect to said lighting.

The submission shall contain the following:

- (a) Plans indicating the location, height, orientation, type of illuminating device, and wattage of each outdoor lighting fixture;
- (b) Description of the illuminating fixtures, lamps, supports, reflectors, and other devices, including, but not limited to, catalog cuts by manufacturers and drawings (including sections where required), glare reduction/control devices, on-off cycle control devices, and mounting devices;
- (c) Location and use of adjacent properties;
- (d) Nearby properties that may be affected by the proposed lighting plan;
- (e) Photometric data, such as that furnished by manufacturers, or similar showing the angle of cutoff or light emissions;
- (f) Additional information that the Planning Board or Code Enforcement Officer determines is necessary, including, but not limited to, an iso-lux plan indicating levels of illumination in foot-candles, at ground level, and a statement of the proposed hours and days of the week when the luminaries will be on and when they will be extinguished.
- (g) Prior to issuance of a certificate of occupancy, the developer or builder must be able to verify to the Village Code Enforcement Officer, in writing, that all outdoor lights were installed as described on the approved lighting plans.

2. Lamp or fixture substitution. Should any outdoor lighting fixture or the type of light source therein be changed to a greater intensity after a lighting permit has been issued or the site plan approved, a change request must be submitted to the Code Enforcement Officer for revised approval. The Code Enforcement Officer, in consultation with the Engineer for the Village, shall review the change request to assure compliance with this section. If the change request is not substantial, the Code Enforcement Officer may approve it. If the change request is substantial, the Code Enforcement Officer shall forward such request to the Planning Board for an amended approval, which must be received prior to substitution.

**E. Approved materials and methods of construction or installation/operation.** The provisions of this section are not intended to prevent the use of any design, material, or methods of installation or operation not specifically prescribed by this section, provided any such alternate has been approved. The Planning Board or Code Enforcement Officer may approve such proposed alternative provided it:

- (1) Provides at least approximate equivalence to the applicable specific requirement of this section; and
- (2) Is otherwise satisfactory and complies with the purpose of this section.

**F. General requirements.**

1. General standards. All outdoor lights and externally illuminated signs shall be designed, located, installed, and directed in such manner as to prevent light trespass at and across the property lines, and to prevent direct glare at any location off the property, and to be shielded to the extent possible so as to confine the light within the property. The Village encourages, and in some cases requires, that the minimum lighting levels be used to attain efficient and effective use of outdoor lighting. The latest recommended levels for outdoor lighting set by the Illuminating Engineering Society of North America (IES) shall be observed for reference levels.

2. Prohibitions.

- (a) Uplighting that is unshielded is prohibited. Externally lit signs, displays, buildings, structures, streets, parking areas, recreational areas, landscaping, and other objects lit for aesthetic or other purposes shall be illuminated only with steady, stationary, fully shielded light sources without causing glare or light trespass beyond the property line.
- (b) Roof-mounted area lighting is prohibited.
- (c) The use of laser lighting for outdoor advertising or entertainment and the operation of search lights for advertising purposes are prohibited.
- (d) The use of mercury vapor lamps is prohibited.
- (e) Unshielded wallpack-type fixtures are prohibited.

3. Shielding. All outdoor light fixtures, shall be fully shielded using full cutoff light fixtures and installed in such a way that no light is emitted above a horizontal plane running through the lowest part of the fixture. The lighting shall also be shielded to prevent direct glare and/or light trespass and shall be, as much as physically practical, contained to the target area. All light fixtures that are required to be fully shielded shall be installed and maintained so that the shielding is effective as described in the definition of a fully shielded fixture. Floodlighting is

discouraged and, if used, must be (1) shielded to prevent direct glare for drivers and pedestrians; (2) must not permit light trespass beyond the property line, and (3) must not emit light above a ninety-degree, horizontal plane.

4. Light trespass. Light trespass from a property shall be designed not to exceed 0.25 foot-candle at the property line. An exception may be made for a nonresidential use in a nonresidential zoning district where light trespass may be allowed up to 3.6 foot-candles onto an adjoining property, provided such adjoining property is also a nonresidential use in a nonresidential zoning district. Light trespass onto a public right-of-way shall not exceed the requirements for roadway lighting found in § I. Adjacent to residential property, no direct light source shall be visible at the property line at ground level or above. Mitigation to avoid or minimize light trespass may include landscaping and berming.

5. Height. Unless specified elsewhere herein and except for recreational facilities, such as baseball and other field sports, the maximum allowable height of a freestanding luminaire shall be 15 feet above the average finished grade. The maximum allowable height of a building- or structure-mounted luminaire shall be 20 feet.

6. Time controls. All nonessential lighting shall be turned off after business hours, leaving only the necessary lighting for site security, which shall be reduced to the minimum level necessary. Nonessential can apply to display, aesthetic, parking and sign lighting. Motion-sensor security lighting is recommended to promote safety and reduce the amount of night lighting in the Village as determined by the Planning Board or Code Enforcement Officer.

7. Auto/truck filling stations. Island canopy ceiling fixtures shall be recessed so that the bottom of the fixture is flush with the ceiling.

8. Recreational facilities, public or private. Lighting for outdoor recreational facilities shall be fully shielded, as defined in this section.

**G. Illuminance and Uniformity.** Light levels shall be designed not to exceed the latest recommended levels for outdoor lighting set by the Illuminating Engineering Society of North America (IESNA) for the type of activity/area being lighted, except light levels for ATM machines shall be in accordance with the New York State ATM Safety Act. Where no standard is available from IESNA, the applicable standard shall be determined taking into account the levels for the closest IESNA activity. Design should establish a hierarchy of lighting to assure a smooth transition from bright areas to those with subdued lighting. Light levels shall be maintained at design levels with lamp or luminaire replacement as needed. Lighting in conformance with this section is required for all parking lots having five or more cars. The following is a table of recommended outdoor lighting types and current IESNA recommendations are to be observed for recommended levels of lighting and lighting types (See also Figures 1-4 attached):

**Recommended Outdoor Lighting Types**

<b>Lighting Type</b>	<b>Color</b>	<b>Recommended Uses</b>	<b>Comments</b>
Incandescent	Full spectrum, white light	Infrequently used lighting, occupant sensor-activated lighting	Most common but most energy-inefficient of common lamp types
Fluorescent	Clear white light	Residential lighting, walkways, building entrances	Excellent color rendition, energy efficient, and inexpensive
Sodium High-pressure	Yellowish cast	Sports fields, parking, roadways	Recommended only where light distribution is valued more than appearance; can negatively affect vegetation
Low-pressure	Monochromatic	Roadways, walkways, parking, security lighting	One of the most energy-efficient but recommended only where color rendering is not important
Light-emitting diodes (LED)	Variable, especially when digitally controlled	Area, architectural, walkway, landscaping and floodlighting	The emerging technology for LED lighting is eventually expected to eclipse traditional lighting due to long life, broad application and highest energy efficiency

<b>Outdoor Lighting Levels</b>	<b>-</b>
<b>Building Exteriors</b>	<b>Foot-candles</b>
Entrances	
Active (pedestrian and/or conveyance)	5
Inactive (normally locked, infrequently used)	1
Service stations	
Approach	1.5
Driveway	1.5
Pump island	5
Service areas	2
Retail outdoor lighting	5
Auto sales lots	5

**Parking Lots**

<b>Level of Activity</b>	<b>Horizontal Illuminance (FC)</b>	
	<b>Average</b>	<b>Minimum</b>
<b>High:</b>  Automotive dealerships Entertainment theaters	4.0	1.0
<b>Medium:</b>  Community shopping areas Cultural, civic, or recreational events Office parking Residential parking	2.4	0.6
<b>Low:</b>  Neighborhood shopping with > 5,000 square feet Industrial employee parking Educational facility parking Recreational facilities Church parking	0.8	0.2

Wherever there is a requirement to maintain security at any time in areas where there is a low level of nighttime activity additional lighting is permitted as approved.

Light-emitting diodes (LED)	Variable, especially when digitally controlled	Area, architectural, walkway, landscaping and floodlighting	The emerging technology for LED lighting is eventually expected to eclipse traditional lighting due to long life, broad application and highest energy efficiency
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**H. Waterfront lighting.**

Outdoor lighting in and around the ponds, lakes, rivers, and other waters of the Village shall not be installed or maintained so as to create a hazard or nuisance to other property owners and shall comply with the following:

- A. Lights on docks shall be no more than three feet above the dock, shall be directed downward and be full cut off fixtures.
- B. Lights illuminating paths, stairs, decks, etc., shall not be directed towards the public bodies of water and shall not direct light upwards.
- C. All outdoor lighting shall be located, mounted and shielded, so that direct illumination is not focused towards the public bodies of water surface more than 20 feet from shore.

**I. Exemptions.** The following uses shall be exempt from the provisions of this section:

- (1) Roadway and airport lighting and lighting activated by motion-sensor devices.
- (2) Temporary lighting for circus, fair, carnival, religious, historic, or civic use.
- (3) Construction or emergency lighting, provided such lighting is temporary and is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.
- (4) Temporary lighting, including holiday lighting for no more than two months per year.
- (5) Lighting associated with agricultural pursuits, including harvest activities, unless such lighting is permanent and/or creates a safety hazard.
- (6) Lighting, preferably low voltage, that is considered a landscape or building design element and is integral to the aesthetic value of the design, as determined by the Planning Board or Code Enforcement Officer.
- (7) All outdoor light fixtures producing light directly by the combustion of natural gas or other fossil fuels.
- (8) Outdoor light fixtures installed on, and in connection with, those facilities and land owned or operated by the federal government, the State of New York, the County of Orange, or any department, division, agency or instrumentality thereof. Voluntary compliance with the intent of this section at those facilities is encouraged.

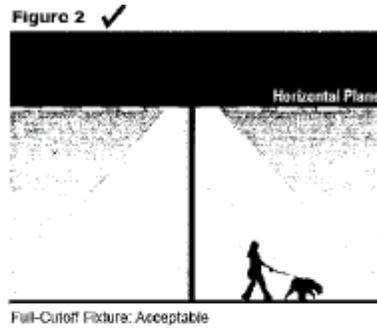
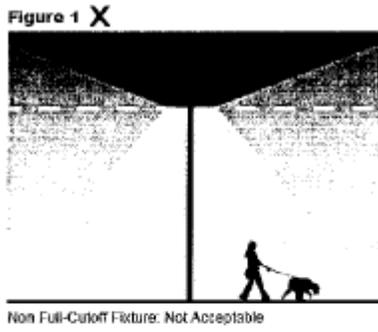
**J. Compliance Date.** All outdoor lighting fixtures, with the exception of lighting and/or light fixtures installed on a structure and /or property devoted exclusively to single- and two-family residential use which are subject to the provisions of Section C above, shall be brought into compliance with the provisions of this ordinance within one year from date of its adoption as a of

Local Law. No replacement or installation of new luminaires, including lamps, shall be permitted unless in conformance with this section.

**K. Maintenance.** Lighting fixtures shall be maintained so that they always meet the requirements of this section.

**L. Enforcement and inspections.** The Village Code Enforcement Officer is responsible for conducting post installation nighttime inspection to verify compliance with the provisions of this section and, if appropriate, to require remedial action and enforcement pursuant to section 172-57.

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**Examples of Full-Cutoff Fixtures ✓**

				
AAL Flex Applications: Parking Pedestrian Roadway	Leotek Electronics LED Outdoor Luminaire Applications: Parking Roadway	Lighting by Branford Glare Buster GB-1000 Applications: Residential Utility Security	SeLux Plane Projector Applications: Parking Roadway Sports/Events	AAL Promenade Applications: Residential Pedestrian

