

# City of Northampton

## MASSACHUSETTS

### In the Year Two Thousand Twenty-Three

Upon the Recommendation of Mayor Gina-Louise Sciarra and Planning & Sustainability

The following proposed zoning ordinance amendment to replace 350-12.2 Outdoor lighting in its entirety as follows:

Delete §350-12.2, Insert:

### **350-12.2 Outdoor Light**

#### **1. GOALS**

It is the intent of this section to establish light standards for outdoor lighting fixtures that are permanently installed or portable illuminating devices used for general illumination or advertisement. Such devices must include, but are not limited to, search, spot and floodlights for buildings and structures; recreational areas; parking lot lighting; landscape lighting; billboards and other signs; street lighting; product display area lighting; building overhangs and open canopies. The goal of this section is to create such standards that result in lighting systems that are designed, constructed, and installed to address:

- a. Offsite Impacts/Glare Control
- b. Safety, to provide lighting where necessary but not more than required for visibility
- c. Energy Efficiency, to reduce our energy demand and carbon footprint
- d. Environmental Impacts and curtailing the degradation of the night sky.

All standards within this section must be met unless the Planning Board explicitly grants a waiver through site plan approval for lighting that does not conform to these standards. Such waivers may be granted if and only if these goals are being achieved.

Lower illumination levels that are more evenly distributed throughout a site will result in fewer intense bright spots and thus minimize impacts on surrounding neighborhoods while maximizing efficiency and promoting safety.

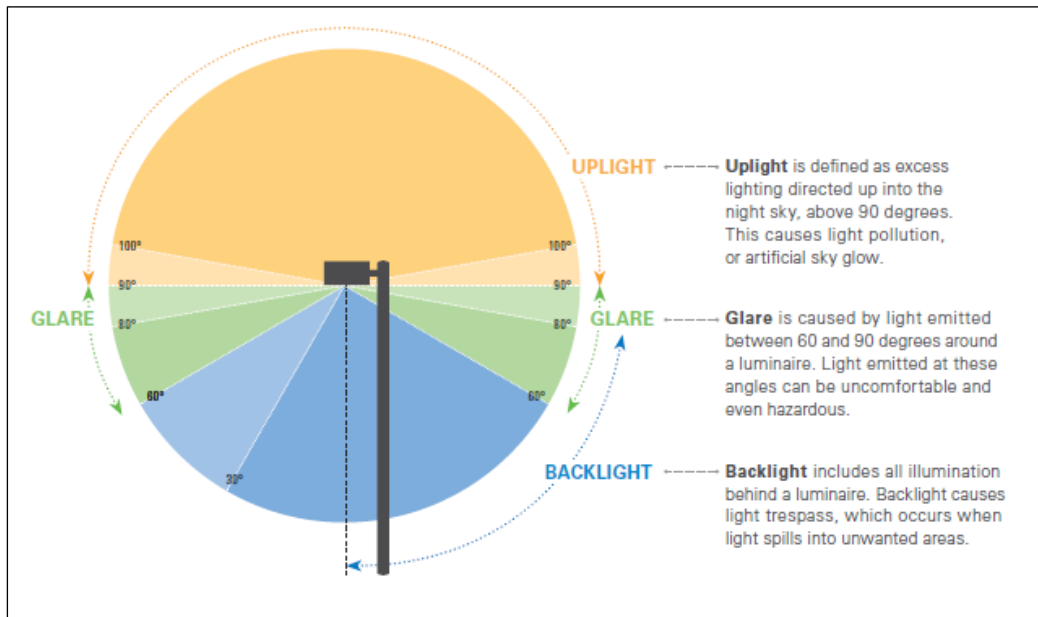
**2. DEFINITIONS.** As used in this chapter, the following terms must have the meanings indicated:

**BACKLIGHTING:** Illumination behind a light fixture. Backlighting must not create light trespass off the premises as defined below and must not be greater than 90<sup>0</sup> from vertical. This often leads to offsite light trespass. See diagram below.

**CORRELATED COLOR TEMPERATURE (CCT)-** The measurement of the color appearance of the light emitted by a lamp in degrees Kelvin.

**CUTOFF (FULL) FIXTURE**—A light fixture that, by design of the housing, does not allow any light emission or direct glare to shine above a ninety-degree angle from a vertical line as taken at the base of the fixture. See diagram below.

**GLARE**—A light source that is bright and concentrated enough to cause loss of visibility or discomfort. This is typically caused when a light source is angled sideways above 60 degrees from vertical as shown below.



**LIGHT TRESPASS**-Light coming from a fixture with illuminance of 0.1 or more foot-candle measured horizontally or vertically at the property line.

**UPLIGHTING** — Any light emitted above a ninety degree horizontal plane. Uplighting creates skyglow.

**BUG ratings**- Lighting classification system as established by the Illuminating Engineering Society (IES) that assigns values for amount of backlight, uplight and glare from a lighting fixture.

### 3. APPLICABILITY

All legal non-conforming luminaires may continue to be used and maintained after the adoption of this Chapter. However, such lights must comply with these requirements upon the first of:

1. An application for any zoning relief from the Zoning Board or Planning Board that triggers review of site features; AND/OR
2. The replacement of any legal non-conforming luminaire with new lighting fixtures/equipment, excluding replacement of lamps/bulbs. See Exemption 1 below.

The Building Commissioner shall make the determination that these standards are being met. Based on this assessment, the property owner must replace or modify fixtures to achieve compliance; this may include additional shielding of lights.

#### 4. STANDARDS.

Any use permitted by zoning either by right or through any type of zoning relief in any district must conform to the following lighting standards. All outdoor light fixtures and illuminated signs for all uses and structures within the City of Northampton must be designed, located, installed and directed in such a manner as to limit light trespass at the property lines and glare at any location on or off the property. If necessary, an applicant may need to provide photometric plans and/or manufacturing specification sheets to show conformance with these standards.

All replacement of outdoor lighting fixtures, as of the date of adoption, must be subject to the provisions of this chapter.

##### A. Cutoffs.

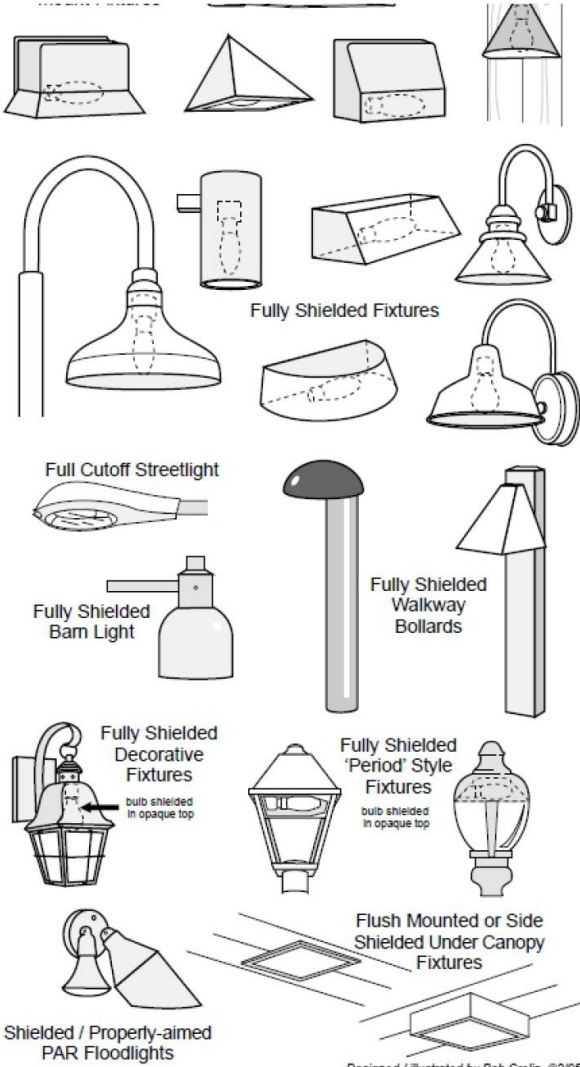
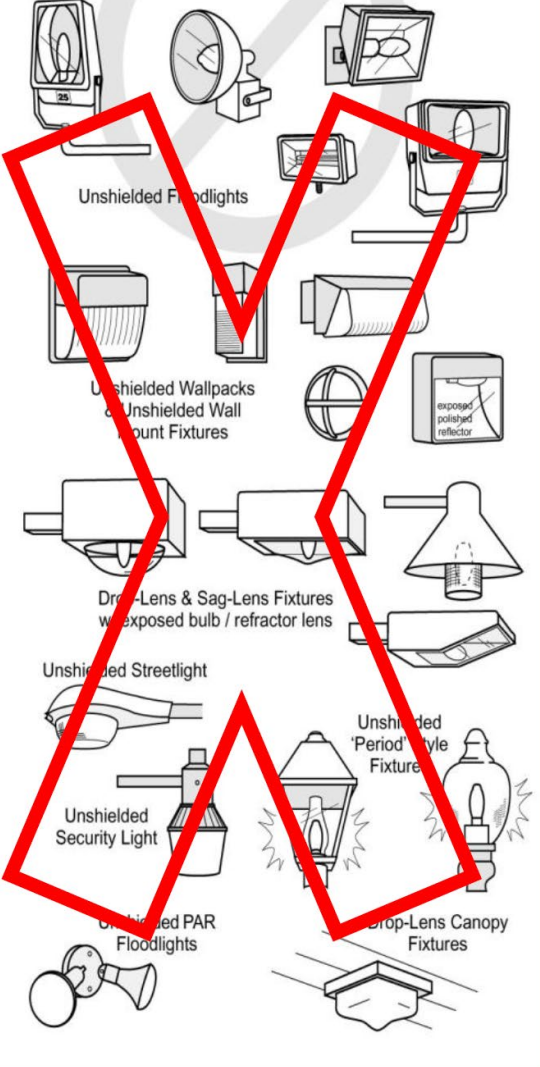
All outdoor lighting must be shielded using full cutoff-type fixtures (See below.) Cutoffs must shield lamps against glare and may consist of internal baffles or reflectors or external panels or other mechanisms. Shielding must prevent direct glare and light trespass so that light is contained to the target area to the extent feasible.

- (1) General site lighting shall not shine above the horizontal plane. See graphic for definition of Glare. No uplighting is allowed; parking, security and aesthetic lighting must shine downward. See graphic under “cutoff definition” in section above
- (2) Light trespass is prohibited.



- (3) Spotlights used to illuminate buildings, signs or specific site amenities/features must be targeted on such objects to prevent direct uplighting. Lighting must not spill beyond nor above the edges of the building, sign, or object of the spotlight.
  - a. Lighting for flags must be downlit from the top of the pole
- (4) Upward search or spotlighting of the sky for entertainment, advertising or other purposes is prohibited.

- (5) Lights or luminaires that are not shielded with cutoffs may be used on the first floor level around single or two family residential structures if lamps/bulbs do not exceed 600 lumens.
- (6) Floodlighting for residential purposes must only be used with motion sensors and must be shielded to minimize: glare for drivers and pedestrians, light trespass, and light must not shine above a ninety-degree angle from vertical.

Light Fixtures Allowed with Full Cutoffs	Fixtures NO Full Cutoffs/Prohibited
 <p>Fully Shielded Fixtures</p> <p>Full Cutoff Streetlight</p> <p>Fully Shielded Barn Light</p> <p>Fully Shielded Walkway Bollards</p> <p>Fully Shielded Decorative Fixtures bulb shielded in opaque top</p> <p>Fully Shielded 'Period' Style Fixtures bulb shielded in opaque top</p> <p>Flush Mounted or Side Shielded Under Canopy Fixtures</p> <p>Shielded / Properly-aimed PAR Floodlights</p> <p><small>Designed / illustrated by Bob Crelin ©2/05</small></p>	 <p>Unshielded Floodlights</p> <p>Unshielded Wallpacks &amp; Unshielded Wall Mount Fixtures</p> <p>Drop-Lens &amp; Sag-Lens Fixtures w/exposed bulb / refractor lens</p> <p>Unshielded Streetlight</p> <p>Unshielded Security Light</p> <p>Unshielded PAR Floodlights</p> <p>Drop-Lens Canopy Fixtures</p>

B. Illumination levels

Site lighting output standards by district. Averaging must be as established by the Illuminating Engineering Society of North America.

<b>Zoning District</b>	<b>Maximum Lumens-per fixture at doorways or building facades*</b>	<b>Maximum Site Foot Candles (as measured at the ground)</b>
FFR	800	NA
RR/SR/SC/WSP	1000	.8
URA/URB/URC/PV/NB/OI/GI	1200	3
GB/ NB	2500	5
CBc/CBs/CBg/FVc/FVg/HB	2500	5

\*Downlight washing building facades allowed only for areas around the building where concrete pedestrian walkways are located. Wall lights for “security” where pedestrian walkways are not present are only allowed with motion sensors that must be timed to turn off 5 minutes after motion detected.

Specific uses:

<b>Additional allowances for specific uses</b>	<b>Maximum Lumens</b>	<b>Maximum Footcandles as measured at the ground</b>
Car Sales for outdoor sale display areas only.	2,000 at any point/fixture	12
24Hour Banking per drive up window	2,500 at any point/fixture	5
Gas Station Canopy	1,000 per pump kiosk	12

All projects subject to Planning Board Site Plan Review must include a proposed photometric plan and lighting specifications that show compliance with these standards. In addition, projects that trigger major site plan review must utilize fixtures that do not exceed these ratings for backlight, uplight and glare (BUG) for any fixture less than 1 pole mounting height from the property lines, unless waived by the Board

Commercial Districts: B1U0G2

Residential Districts: B0U0G1

C. Energy Efficiency

Because they are the least energy efficient and contain elements harmful for the environment the following are prohibited:

- Mercury vapor
- Incandescent lighting fixtures

#### D. Spectrum Management

The emission of light by all luminaires in all lighting must have a correlated color temperature of the light between 0 to 2700 degrees Kelvin.

#### E. Control

All nonresidential site lights must be turned off one hour after close of business. However, lights may be set to motion controls after close of business so long as they are timed to turn off 5 minutes after motion is detected.

#### F. Pole and Mounting Heights

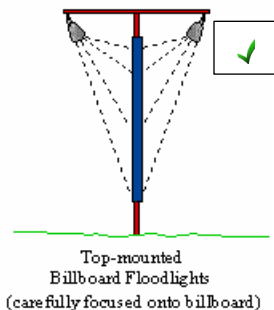
Site light poles must be a maximum of 25 feet with a maximum mounting height of 25 feet in parking lots for commercial and industrial uses within commercial and industrial parking lots and along streets. The maximum pole and mounting height in all residential districts must be 16 feet. Greater pole mounting heights may be allowed with site plan approval from the Planning Board.

All lights located within the right-of-way directing light onto private property must comply with general site lighting standards above in section A. This may require shielding to prevent glare and uplighting.

#### G. Sign Lighting

Lighting of wall signs must conform to these output standards. These standards are in addition to those designated in Subsection B above and must not result in lighting that exceeds those allowed on the site as described in Subsection B.

Signs shall be illuminated from the top or internally illuminated. Lights must be shielded to contain all light directed onto the sign and must not cause offsite glare.



All business sign lights must be equipped with a photo-control and be turned off at the close of business, unless the Planning Board approves an alternative through site plan review and in compliance with E above. See also 350-7.0 for additional standards for dynamic displays and other signs.

SURFACE TYPE	Adjoining Residential Districts (lumens per sign)	Business Districts- (lumens per sign)
Light Reflective surfaces	800	1000
Medium-light surfaces	1000	2000
Medium-dark surfaces	1500	2500
Dark (absorbing) surfaces	2000	3000

Luminance levels on internally illuminated and electronic signs: Luminance levels during permitted operating hours must not exceed a range of 60 nits for white signs to 150 nits for darker signs. This figure is as measured under conditions of a full white display.

**Sign lighting and illuminated signs must be turned off one hour after the close of business.** Multi-tenant signs must be turned off one hour after all businesses are closed.

## 5. STREET LIGHTS

See Northampton Subdivision Regulations for Street light standards on streets/rights of ways. Street light applications may not exceed 90° and shall meet the following:

DISTRICT	B	U	G	Maximum Foot-candle	
CBcore/FVcenter and general, HB	2	0	2	4 FC	
CBside/ CBgateway/OI/GI/GB/ NB/PV	1	0	1	3.5 FC	
URA, URB, URC	1	0	1	2 FC	
RR/SR/SC/WSP	0	0	1	1 FC	

Street lights must be regulated to dim by 50% after midnight.

Waivers from streetlight standards on public ways may be granted by the Planning Board after a site plan review procedure if and only if necessary to improve pedestrian safety on pedestrian ways or crosswalks or, in the case of municipally funded projects, cost to the City to meet the by-right

standards will be extraordinary. Waivers granted to the city for extraordinary costs must be supported by 1) evidence that design, procurement, and installation costs to comply with by-right standards are more than 50% more than costs associated with the non-compliant design, or 2) demonstrated loss of alternative funding for the project.

All modifications granted through waivers must be consistent with Dark Sky International and Illuminating Engineering Society guidance. In no case shall a waiver be granted that increases the color temperature above 3000K or more than 1 backlight or glare rating above the by-right standard for the relevant zoning district. (See table above). No waiver shall be granted for any increase in the uplight rating.

Public Properties owned by the City such as parking lots, parks, schools, and other community gathering spaces must adhere to these standards.

## 6. EXEMPTIONS.

- 1) Permanent outdoor light fixtures lawfully installed prior to and operable on the effective date of the requirements in this chapter so long as they do not create light trespass as defined herein on an abutting residential structure within a residential zone.

Bulb/lamp replacement must not constitute “replacement lighting”. However, no new bulbs may exceed lumen levels nor Correlated Color Temperature limits prescribed herein unless adequate information, as determined by the Building Commissioner, is provided to show that no such bulbs are compatible with the existing fixture.

- 2) Airport operations lighting and aircraft navigational beacons as established by the Federal Aviation Administration are permanently exempt from these provisions. All other airport outdoor lighting must conform to the intent of this chapter.
- 3) Festivals/fairs that require the use of temporary outdoor lighting fixtures are exempt except that permanent installations at dedicated sites must conform to the requirements of this chapter. All such temporary lights for festivals and fairs must be turned off 1 hour after the event closes for the day. After this time, lights may be set to motion controls so long as they are timed to turn off 5 minutes after motion is detected.
- 4) Public monuments or statuaries that create uplighting. All lighting must be focused within the edges of the statuary. Adequate shielding to prevent glare onto any public way and prevent light trespass as defined herein may be required.
- 5) Underwater/pool lighting
- 6) Decorative Outdoor String Lights. Such lighting must be timed to turn off at 1 AM each day.
- 7) Lighting that is only used under emergency conditions by civil officers, agents and officials to perform their duties to maintain the public health, safety and welfare.



- 8) Public Outdoor recreational facilities and School athletic fields are exempt from lumen cap when:
  - Compliance with shielding and spectrum management requirements in A and D above is met
  - Lights are turned off no later than 30 minutes after the event concludes.
- 9) The United States flag may be lit subject to section 4A(3)(a) and such flag lights must be dimmed to 50% after 12 a.m.

In City Council, February 1, 2024  
Adopted in Final Reading on Roll Call Vote of 9 Yes, 0 No, 0 Absent

Attest: *Laura Krutzger*, Clerk of Council

Passed final reading, ordained and enrolled.  
I hereby certify that the above Ordinance was adopted by the Northampton City Council on February 1, 2024

Approved: Gina-Louise Sciarra, Mayor

Gina-Louise Sciarra, Mayor approved the Ordinance on February 6, 2024

Attest: *Laura Krutzger*, Clerk of Council