

****Draft****

Resolution Urge the City to amend the Dark Sky ordinance

Rationale:

The night sky is a precious natural resource, a common and universal heritage of humankind. But access to the night sky is at risk. Researchers have identified light pollution as a growing problem around the world. The 2016 World Atlas of Artificial Sky Brightness identifies Northfield as a place whose night sky is at least 5 times as bright as the natural sky (<https://cires.colorado.edu/artificial-sky>). Local astronomers have reported increasing light pollution in Northfield as well.

Light pollution not only wastes energy, it has negative impacts on human health, wildlife, and ecosystems. Of particular concern are the new “blue-rich” LEDs, which Excel Energy has installed in their street lights. These LEDs emit light that is blue on the color spectrum, making it brighter and whiter than traditional night lighting. [Recent research](#) shows that exposure to this blue-rich light at night may contribute to health risks such as cancer, obesity, heart disease and diabetes. It has similar negative impacts on wildlife. In sum, light pollution interferes with the City’s goals as stated in the 2008 Comprehensive Plan, which include promoting healthy lifestyles and preserving and enhancing its natural resources.

The City began to address light pollution with the Dark Sky regulation in the Land Development Code. But that regulation does not address the color temperature of night lighting; it does not cover sources of light pollution that don’t require a building permit; and it does not provide for enforcement after a building is permitted. The City Code should be updated to address these issues.

Resolution:

WHEREAS light pollution in Northfield has been increasing, limiting citizens’ access to the night sky; and

WHEREAS inappropriate night lighting wastes electricity, thus reducing energy efficiency; and

WHEREAS recent research demonstrates that blue-rich light pollution has especially harmful ecological and health impacts; and

WHEREAS the City intends to preserve and enhance its environmental resources, and

WHEREAS the City intends for natural resource conservation to be incorporated into the design and construction of residential, commercial and industrial development;

Therefore, the EQC urges the Planning Commission to recommend to the City Council the following amendments to three sections of the City Code:

Amended Dark Sky Policy
(Proposed amendments in red)

**I. Amendment to the Northfield City Code, Chapter 34 (Land Development Code),
Article 3.3**

3.3.4 Outdoor Lighting Standards.

(A) **Purpose.** It is the purpose of these lighting standards to recognize the values as expressed by the International Dark Sky Association and implement lighting standards that will serve to enhance the value of dark sky and minimize ambient lighting to the degree possible. These regulations are intended to minimize the spillover of light and glare on operators of motor vehicles, pedestrians, and land uses in the proximity of the light source. With respect to motor vehicles in particular, safety considerations form the basis of the regulations contained in this section. In other cases, both the nuisance and hazard aspects of glare are the basis for these regulations.

(B) **Applicability.** The requirements of this section shall apply to all projects unless otherwise stated.

(C) Outdoor Lighting Plan.

- (1) An exterior light plan shall be required for the installation or modification of exterior lights for any project requiring site plan review (See Section 8.4.5, Type 2 Review Procedure).
- (2) The lighting plan shall be prepared by a certified professional either an architect, landscape architect or lighting designer.
- (3) The applicant must provide a plan that identifies the location, height and type of luminaries and shows how the applicant intends to comply with this section.
- (4) A photometric plan of the site and fixture data sheets must be submitted with the site plan in order to determine the effect of the luminaries on surrounding properties.

(D) Outdoor Lighting Standards.

- (1) The placement of light poles within raised curb planter areas or landscaped islands is encouraged to the extent practical. Where conflict may occur as a result of adherence to this standard with respect to parking lot trees that may obscure required lighting, the design of parking lot lighting shall be modified to overcome these conflicts and shall be interpreted as being in compliance with lighting standards.
- (2) All wiring, fittings, and materials used in the construction, connection and operation of electrically illuminated signs shall be in accordance with the provisions of the State Electrical Code in effect.
- (3) The maximum height of a light fixture, either mounted on a pole or on a structure, is established in Table 3.3-1.

Table 3.3-1: Maximum Height of a Light Fixture	
District	Maximum Height of 90° Cutoff Lighting (See Figure 3-13)
R1, R2, R3, R4, N1, N2, A-S, and NC-F districts	12 feet [1]
C1, C2, I1, CD-S, PI-S, and ED-F districts	20 feet [2]
<p>1. When the bulb, lamp, or light source is completely recessed and/or shielded from view by an observer at five feet above grade, the maximum height may be increased to 15 feet.</p> <p>2. When the bulb, lamp, or light source is completely recessed and/or shielded from view by an observer at five feet above grade, the maximum height may be increased to 30 feet.</p>	

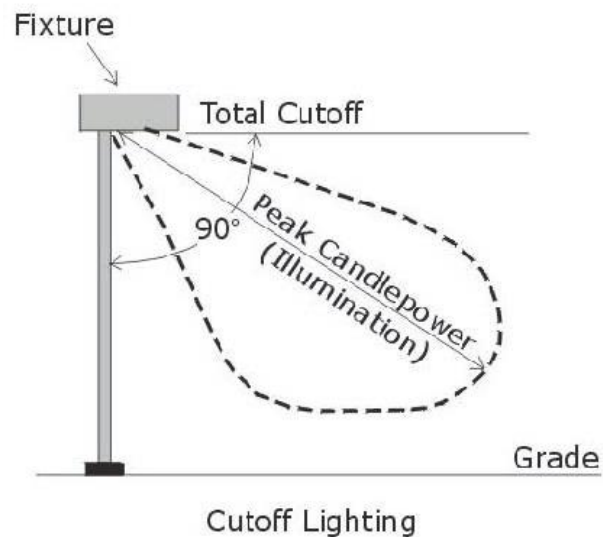


Figure 3-13: Cutoff lighting.

(4) **Illumination Standards.**

- (a) Outdoor lighting shall not be designed or located in such a way as to shine directly into an adjacent dwelling unit, regardless of the applicable zoning district.
- (b) The maximum illumination permitted in each district type, as demonstrated by a photometric drawing, shall be as shown in Table 3.3-2 below:

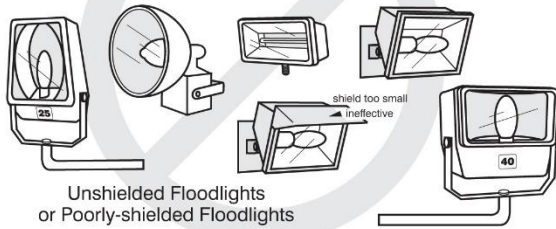
Table 3.3-2: Maximum Illumination Level at the Property Line		
District	Average foot-candles across the Property or Area may not exceed:	Maximum Illumination at the Property Line, in foot-candles) may not exceed:
R2, R3, R4, N1, N2, and NC-F districts	1.5	0.1
C1, C2, I1, CD-S, PI-S, and ED-F districts	2.5	0.1 when adjacent to a residential use or 2.5 when adjacent to lot in the same district
Parking lots of six spaces or more	2.0	0.1 when adjacent to a residential use or 0.5 when adjacent to a nonresidential use

- (c) When parking lots are within 15 feet of a property line, the placement cutoff light fixtures shall be designed to maintain the illumination levels at the property line as cited in Table 3.3-2.
- (d) Wall packs on buildings may be used at entrances to a building to light unsafe areas. They are not intended to draw attention to the building or provide general building or site lighting. "Wall Packs" on the exterior of the building shall be fully shielded to direct the light vertically downward.
- (e) Lighting Fixtures. Examples of acceptable and unacceptable lighting fixtures are shown below. This is not meant to be an exhaustive list, but to emphasize that lighting shall be fully shielded and light fixtures shall emit light downward regardless of the location of the bulb or plastic covering that may emit light outward.

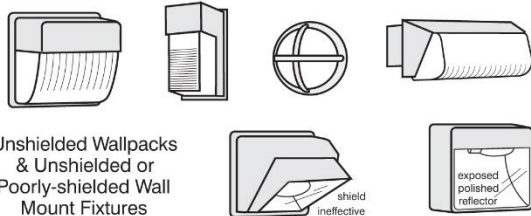
Examples of Acceptable / Unacceptable Lighting Fixtures

Unacceptable / Discouraged

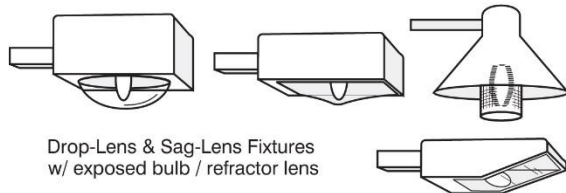
Fixtures that produce glare and light trespass



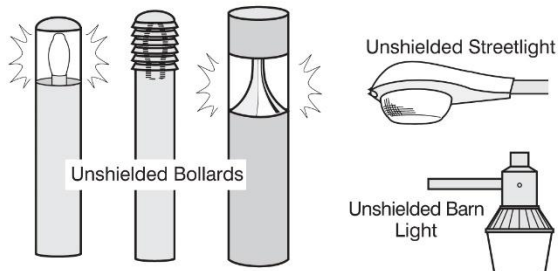
Unshielded Floodlights
or Poorly-shielded Floodlights



Unshielded Wallpacks
& Unshielded or
Poorly-shielded Wall
Mount Fixtures



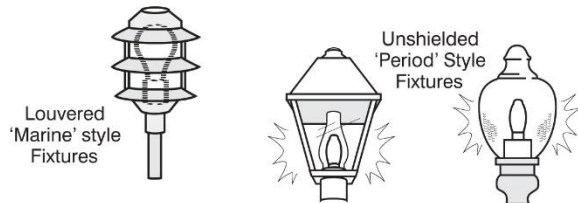
Drop-Lens & Sag-Lens Fixtures
w/ exposed bulb / refractor lens



Unshielded Bollards

Unshielded Streetlight

Unshielded Barn
Light

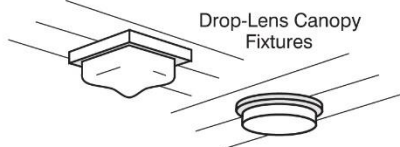


Louvered
'Marine' style
Fixtures

Unshielded
'Period' Style
Fixtures



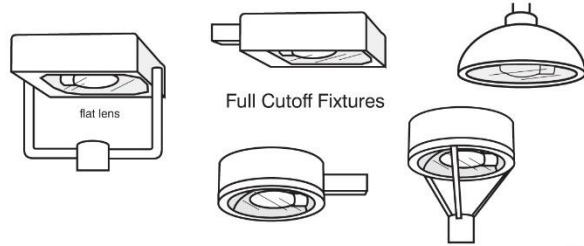
Unshielded PAR
Floodlights



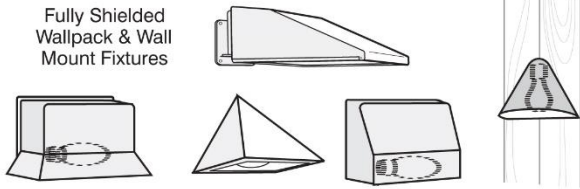
Drop-Lens Canopy
Fixtures

Acceptable

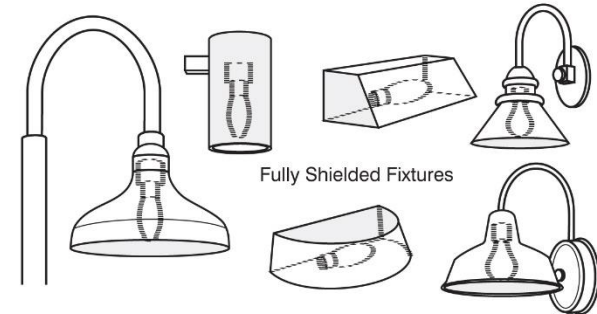
Fixtures that shield the light source to minimize glare and light trespass
and to facilitate better vision at night



Full Cutoff Fixtures



Fully Shielded
Wallpack & Wall
Mount Fixtures



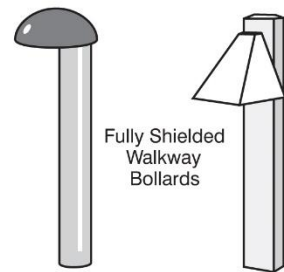
Fully Shielded Fixtures



Full Cutoff Streetlight



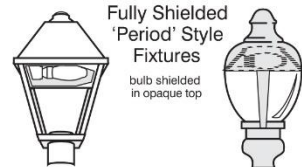
Fully Shielded
Barn Light



Fully Shielded
Walkway
Bollards



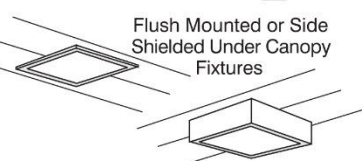
Fully Shielded
Decorative
Fixtures



Fully Shielded
'Period' Style
Fixtures



Shielded / Properly-aimed
PAR Floodlights



Flush Mounted or Side
Shielded Under Canopy
Fixtures

(E) **Temperature of Lamps.** Lighting sources, or lamps (bulbs), shall not exceed a maximum Correlated Color Temperature (CCT) of 3,000 degrees Kelvin as listed on the packaging or manufacturer specifications.

(F) **Lighting Controls.** This provision applies to zoning districts C1, C2, I1, PI-S, and CD-S.

(1) Outdoor lighting shall utilize motion sensors, timers and/or programmable controllers. Time of outdoor lighting reduction shall be 11:00 pm. After such time, total outdoor brightness (lumens) shall be reduced by at least 50% or turned off. It is recommended that outdoor lighting be turned off when no one is present to use the light.

(2) :Under the following circumstances, lighting need not adhere to the lighting standards in Section Xx.XX (F) applicable after 11 PM.

(a) Outdoor lighting consisting of only one light fixture.

(b) Lighting required by the Building Code

(c) If normal business operations extend beyond 11PM. In those cases, the lighting standards applicable after 11PM shall apply upon closing.

(d) Permitted 24 hour operations.

(e) Where, as determined by the City, lighting levels must be maintained for safety reasons or special events.

(5) **Exemptions.** Outdoor athletic facilities developed on property zoned CD-S College Development Zone and other zones where athletic facilities are a permitted or accessory use shall be exempt from the lighting standards of this section except that lighting for such facilities shall adhere to these standards after 12:00 a.m.

(6) **Nonconforming Outdoor Lighting.**

(a) The nonconforming use of lighting may continue until the luminaire (total fixture, not just the bulb) is replaced, at which point the lighting shall be subject to all the standards of this subsection with the exception of the maximum height.

(b) When a nonconforming lighting fixture, including the pole or support, is removed, the lighting fixture shall lose its legal nonconforming status and all new lighting shall be subject to all standards of this subsection.

II. Amendment to the Northfield City Code, Chapter 16, Art. 2 (Northfield Property Maintenance Code)

Sec. 16-23. - Amendments.

The IPMC is adopted with the following amendments:

(1) *Section 101.1. Title.* Amended to read: These regulations shall be known as the Property Maintenance Code of the City of Northfield, hereinafter referred to as "this code."

...

(4) *Section 302.4. Weeds.* Amended to read: All premises and exterior property shall be maintained free from weeds or plant growth in excess of twelve inches in height. All noxious weeds shall be prohibited. Weeds shall be defined as all grasses, annual plants and vegetation, other than trees or shrubs provided; however, this term shall not include cultivated flowers and gardens. ...

(5) *Added after Section 302.9: Section 302.10:* All outdoor lighting shall be maintained to conform to the applicable standards of Chapter 34, Article 3.3.4 with regard to shielding, maximum illumination, color temperature, lighting controls, and trespass.

III. Amendment to the Northfield City Code, Chapter 46 (Nuisances)

Sec. 46-6: Light pollution

1) No person shall cause light trespass constituting an unreasonable interference with the common and usual use of a neighboring property or with the public's opportunity to observe the night sky within the limits of the city of Northfield. Any such trespass is hereby declared to be a public nuisance, which is prohibited by this section.

2) It shall be the duty of the city administrator to give notice to any person violating this section to remove or abate the nuisance forthwith. If the owner or occupant of any premises on which a nuisance is situated shall neglect to remove or abate the nuisance within 24 hours, it shall be lawful for the city administrator to cause the nuisance to be removed or abated and, for that purpose or for the purpose of enforcing this section, may enter any building or go upon any lot or premises in the city.

3) City staff or designee shall perform audits of all outdoor lighting in the city. The first audit shall be completed by [date]. Subsequent audits shall take place at intervals determined by the city administrator but no less than once every 10 years. These audits shall identify all lighting that does not conform to the standards of Chapter 34, Article 3.3.4 with regard to shielding, maximum illumination, color temperature, and trespass. The results of these audits shall be made available to the public.