

Winthrop, WA 2019 Exterior Lighting and Dark Sky Ordinance

Chapter 15.06

PROPOSED

15.06.010: General Provisions

A. Title:

This Chapter, together with the amendments codified in this Chapter, shall be known and may be cited as the TOWN OF WINTHROP EXTERIOR LIGHTING AND DARK SKY ORDINANCE.

B. Purpose:

The general purpose of this Chapter is to protect and promote the public health, safety and welfare, quality of life, and the ability to view the night sky by establishing a process for review of exterior lighting, as well as a process for implementation of existing county and town lighting regulations Okanogan County Code 17A., and Winthrop Municipal Code Title 15.08.260.B, see 15.06.90 Appendix A - Referenced Codes.

1. Curtail light pollution, reduce sky glow and improve the nighttime environment for both human and animal life;
2. Protect the ability to view the night sky, thereby preserving the quality of life for both residents and visitors;
3. Provide safe roadways for motorists, cyclists and pedestrians;
4. Ensure that sufficient lighting can be provided where needed to promote safety and security;
5. Prevent light trespass to the extent possible in all areas of the town;
6. Promote efficient and cost effective lighting;
7. Protect against direct glare and excessive lighting;
8. Provide lighting fixture guidelines (Figure 2);
9. Provide assistance to property owners and occupants in bringing nonconforming lighting into conformance with this Chapter;
10. Work with other jurisdictions within Okanogan County to meet the purposes of this Chapter; and

11. Allow for flexibility in the style of lighting fixtures.

C. Scope:

IDSA Guidelines: [The ordinance shall] Affect an amortization period, applicable to ALL publicly AND privately owned lighting, to end not more than ten (10) years from the effective date of the outdoor lighting policy, after which all non-conforming lighting extant at the time of enactment must be brought into compliance with the policy.

All exterior lighting installed after the effective date hereof in any and all zoning districts in the town shall be in conformance with the requirements established by this Chapter and any other applicable ordinances. All existing lighting installed prior to the effective date hereof in any and all zoning districts in the town shall be addressed as follows:

1. All existing lighting located on a subject property that is part of an application for a town planning department design review, conditional use, subdivision permit, or building permit is required to be brought into conformance with this Chapter. Conformity shall occur prior to issuance of a certificate of occupancy, final inspection or final plat recordation, when applicable. For other permits, the applicant shall have a maximum of thirty (30) days from date of permit issuance to bring the lighting into conformance.
2. All existing exterior commercial and public lighting except street lighting that is not in conformance with this Chapter shall be brought into conformance with this Chapter by September 1, 2021.
3. Any building, parking area, or yard luminaire in any zoning district that fails to protect adjacent properties from glare and direct lighting according to Okanogan County Code 17A (see appendix X) must be brought into conformance with this Chapter 15.06 by September 1, 2021.
4. All existing exterior residential lighting, not affected by subsections C1 and C3 of this section, that does not comply with this Chapter is required to be brought into conformance with this Chapter by September 1, 2024¹.
5. Streetlights not in conformance with this Chapter shall be brought into conformance with this Chapter by September 1, 2029.
6. In the event of a discrepancy in applicable ordinances, the most restrictive shall apply.

15.06.020: Applicability

A. Any one or more of the following persons shall be known in this document as the "Administrator": The Mayor of Winthrop, members of the Town Council, building officials, and/or the town administrator(s). The

¹ The IDSA is authorized to grant as long as ten years to achieve compliance.

Administrator shall have the authority to require new exterior lighting, as well as existing lighting pursuant to subsection 15.06.010.C.1 of this Chapter, to meet the requirements of this Chapter.

B. Lighting Plans Required: All applications for design review, conditional use, subdivision and/or building permits shall include lighting plans showing location, type, height, color temperature, lumen output and amount of all proposed and existing fixtures. The applicant shall provide enough information to verify that lighting conforms to the provisions of this Chapter. The Administrator shall have the authority to request additional information in order to achieve the purposes of this Chapter.

15.06.030: Lighting Standards²

A Full Shielding

IDSA Guideline: Full shielding of all lighting fixtures over 1000 initial lamp lumens, where the term, "initial lamp lumens" is defined as the number of lumens of light emitted by a lamp when new and not counting any depreciation of output due to the age of the lamp. This information can be found in manufacturer data sheets.

1. All exterior lighting shall comply with the acceptable lighting fixtures located in Figure 1 at the end of this Chapter. All exterior lighting fixtures shall be full cutoff fixtures with the light source fully shielded, except as exempted in this Chapter. Further lighting ordinance apply in the B-1, B-2, B-3 zones per Westernization code 15.08.260.
2. The contents of Figure 1, Lighting Fixture Guidelines shall be incorporated into this Chapter as guidelines for the public and the town for use in meeting the intent of this Chapter. The luminaires illustrated in the figure only serve as examples. The town does not endorse or discriminate against any manufacturer or company that may be shown, portrayed or mentioned by the examples. The contents of Figure 1, Lighting Fixture Guidelines, along with Dark Sky brochures from the International Dark Sky Association, shall be provided to the public at the Winthrop Town Hall.
3. Up lighting is prohibited in all zoning districts, except as permitted [for public flagpoles] elsewhere in this Chapter.

B. Correlated Color Temperature

IDSA Guideline: A limit on the emission of short-wavelength light through one of the following restrictions: (i) The correlated color temperature (CCT) of lamps must not exceed 3000 Kelvins; **OR** (ii) Allowed lighting must not emit more than 25% of its total spectral power at wavelengths < 550 nanometers; **OR** (iii) The scotopic-to-photopic (S/P) ratio of allowed lighting must not exceed 1.3

² The following sections have been re-numbered to correspond to the numbering system in the IDSA Community Program Guidelines. Notes have been added by the editor where our ordinance appears to fall short.

All exterior lighting shall utilize light sources with a correlated color temperature not to exceed 3000 Kelvin, with 2700 Kelvin suggested.³

C. Unshielded Lighting

IDSA Guidelines: A restriction on the total amount of unshielded lighting, such as a limit on lumens per net acre or a total site lumen allowance in unshielded fixtures (or equivalent wattages).

The ordinance does not permit unshielded lighting except for public flagpoles and small floodlights, pointed down.

D. Over-Lighting:⁴

IDSA Guidelines: A policy to address over-lighting, such as lumens per net acre caps (irrespective of shielding state) or maximum illuminance specifications

Light emitted from a property shall not cause the light level along any of its property boundaries to exceed the limitations listed in Table 1: Light Trespass Matrix, such levels to be measured at a height of 60 inches above grade in a plane at any angle of inclination.

Exception #1: ~~All vehicle lighting originating from a commercial property shall be shielded from other adjacent properties.~~ Incidental light trespass, such as lighting emanating from turning motor vehicles or motion-sensor-activated lighting, is permitted.

Exception #2: Light trespass from public streetlights is permitted.

The Administrator may require that any new exterior lighting or existing lighting that comes before them meet the standards for maximum Illuminance output as established by IESNA.⁵

Table 1—Light Trespass and Over-lighting Matrix

Zone of Light Source	Impacted Zone	Maximum Limit (foot-candles)
Non-commercial (R-1, R-2, PU, TR, MU)	Non-commercial (R-1, R-2, PU, TR, MU)	0.1
Non-commercial (R-1, R-2, PU, TR, MU)	Commercial Zones (B-1, B-2, B-3, Ind)	0.5
Commercial Zones (B-1, B-2, B-3, Ind)	Non-commercial (R-1, R-2, PU, TR, MU)	0.1
Commercial Zones (B-1, B-2, B-3, Ind)	Commercial Zones (B-1, B-3, Ind)	0.5
Community Core (B-2)	Community Core (B-2)	No limit

³ The Town of Winthrop is exploring ways to pay for the changeover of streetlights by 2029 in order to comply with this rule.

⁴ Previously titled, "Light Trespass and Excessive Lighting." This section has been re-worded as one main provision followed by two exceptions.

⁵ IDSA 2018 guidelines no longer permit the word "may". This section is probably redundant, perhaps we can omit it.

E. Publically-Owned Outdoor Lighting⁶

IDSA Guidelines: Regulations of new installations of publicly-owned outdoor lighting: (i) A provision that clearly indicates where, when, and under what circumstances new publicly owned outdoor lighting, including street lighting, is warranted and will be permitted; **AND** (ii) A provision that requires that adaptive controls and/or curfews be employed in all future installations of public outdoor lighting.

The ordinance does not yet address this issue.

F. Illuminated Signs

IDSA Guidelines: (i) Luminance levels for operation between sunset and sunrise shall not exceed 100 nits (100 candelas per square meter) as measured under conditions of a full white display; **AND** (ii) Sign illumination shall be extinguished completely no later than one (1) hour after sunset, or when the business closes for the day, whichever happens later, and remain off until one (1) hour before sunrise; **AND** (iii) The luminous/illuminated surface area of an individual sign shall not exceed 200 square feet (18.6 square meters)

This provision seems to refer only to automated signs that could have a "full white condition." We have written to Adam Dalton to clarify whether it applies to wooden signs with down lighting. According to 15.06.040(C), "any lighting that is flashing, blinking, rotating, chasing, or rapidly changing in color or intensity is prohibited."

G. Outdoor Recreational and/or Athletic Field Lighting

IDSA Guidelines: Outdoor recreational and/or athletic field lighting may be exempted from the strict shielding and short-wavelength emission requirements above provided that all of the following conditions are met: (i) Illuminating Engineering Society (IES) lighting guidelines (RP-6) are followed according to the appropriate class of play; **AND** (ii) Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications; **AND** (iii) Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance); **AND** (iv) Off-site impacts of the lighting will be limited to the greatest practical extent possible; **AND** (v) A strict curfew requirement (e.g., lights must be extinguished by 10pm/2200h or one hour after the end of play, whichever is later) is observed; **AND** (vi) Timers must be installed to prevent lights being left on accidentally overnight by automatically extinguishing them.

The ordinance does not yet address this issue.

⁶ Previously titled, "Area Lights," #1-4

H. Area Lights:

1. All area lights, including streetlights and parking area lighting, shall be level mounted and eighty-five degrees (85°) full cutoff type fixtures.
2. Residential Streetlights shall be limited to three thousand (3000) lumens, unless otherwise recommended by the Public Works Department.
3. Nonresidential Streetlights shall be limited to three thousand (3000) lumens, unless otherwise recommended by the Public Works Department.
4. Lights on major intersections on state highways shall be limited to three-thousand (3000) lumens, unless otherwise recommended by the Public Works Department.
5. Parking area lights are encouraged to be greater in number, lower in height and lower in light level, as opposed to fewer in number, higher in height and higher in light level. Parking lot lighting shall not exceed IESNA recommended illuminance (foot-candle) level and are encouraged to utilize the lowest range available.
6. All freestanding area lights within a residential zone, except streetlights, shall be mounted at a height in feet equal to or less than the value $3 + (D/3)$, where D is the distance in feet to the nearest property boundary.
7. Luminaire Mounting Height: Freestanding luminaires shall be no higher than twenty-five feet (25') above the stand/pole base; except, that luminaires used for playing fields shall be exempt from the height restriction, provided all other provisions of this Chapter are met and the light is used only while the field is in use; and except, that streetlights used on major roads may exceed this standard if necessary as determined by the town council, as advised by a lighting engineer. Building mounted luminaires shall be attached only to walls, and the top of the fixture shall not exceed the height of the parapet or roof, whichever is greater.
8. Area lights turned off by 10:30 pm are exempt from section 15.06.030B of this Chapter, provided all other standards of this section are met.

I. Public Outdoor Lighting

Public outdoor lighting, including holiday lighting, shall be permitted to ensure the safety and enjoyment of the intended public use. All public lighting shall comply with the standards established herein and shall be turned off after hours of operation or when not in use. When practically possible, motion sensors may be used. Public Outdoor Lighting is exempt from lighting curfews and exempt from section 15.06.030B of this Chapter.

J. Outdoor Signs

Outdoor signs located in zones B1, B2, and B3 shall be regulated by the Westernization rules, Town of Winthrop 15.08.260. Lighted outdoor signs in other zones are prohibited, with the exception of low-wattage illuminated street address numbers.

K. Lighting Fixture Exceptions and Additional Requirements for All Zones

Type of Lighting	Full Cutoff Light Fixture	Light Trespass Standards	Additional Requirements
Canopy Lighting	Required	Not exempt	- All canopy lighting shall be recessed sufficiently so as to ensure that no light source is visible from or causes glare on public rights of way or adjacent property.
Porch Lighting	Not Required	Not exempt	- All porch lighting shall be recessed sufficiently to as to ensure that no light source is visible from or causes glare on public rights of way or adjacent property.
Outdoor Holiday Lights	Not Required	Exempt	- Shall only be displayed from Saturday after Thanksgiving to April 1st - Exempt from color temperature requirements set forth in this Chapter. - All new exterior holiday lighting shall be LED lighting, or bulb that has been demonstrated to be the most energy efficient technology available. - Flashing holiday lighting is not permitted.
Flagpole Lighting	Not Required	Exempt	- Upward flagpole lighting is permitted for governmental flags only. - The maximum lumen output shall be one thousand three hundred (1,300) lumens. - Flags are encouraged to be taken down at sunset to avoid the need for lighting.
Floodlights	Not Required	Not Exempt	- Floodlights must be pointed at an angle no more than 25 degrees away from straight down. - Floodlights must not cause glare on public rights of way - Floodlights are encouraged to be motion sensor activated.
Internally illuminated or neon signs	Not Required	Not Exempt	- Not permitted outdoors - Inside a building, prohibited within six feet of a window where the illuminated face is visible from the street.
Sensor Activated Lighting	Required	Exempt	- Shall be located so as to prevent lighting into adjacent properties or into a public right of way. - Lighting shall activate only when motion on the property is detected and shall deactivate within no more than five (5) minutes. -Lighting shall not be triggered by any activity off the property or in the public right of way. -The maximum lumen output shall be 600 lumens.
Temporary Lighting	Required	Exempt	- Lumens output shall be approved by the Administrator.
Temporary emergency lighting	Not Required	Exempt	- Utilized by public safety services. Exempt from provisions of this Chapter.
Highway 20 lighting	Required	Exempt	- Correlated Color temperature maximum 3000 Kelvin, 2700 Kelvin suggested. ⁷
Lighting for Motor Vehicle Fueling or Service Stations	Required	Not Exempt	-The average foot-candle lighting level at the pump for new and existing service stations is required to be no greater than thirty (30) foot-candle average, as set

⁷ The Town of Winthrop may be unable to affect WA ST DOT highway lighting policy.

Type of Lighting	Full Cutoff Light Fixture	Light Trespass Standards	Additional Requirements
			by the IESNA for urban service stations.
Lighting for Radio Communication and Navigation Towers	Not Required	Not Exempt	-All radio, communication and navigation towers that require lights shall have dual lighting capabilities. -For daytime, the white strobe light may be used, and for nighttime, only red lights shall be used. -Lighting that is required by legal jurisdictions are exempt from this provision.

15.06.040: Prohibited Lighting

- A. Any light source that does not meet the requirements of this Chapter.
- B. Searchlights, beacons, laser sources, and other high-intensity light fixtures.
- C. Except as otherwise allowed by this Chapter, any lighting that is flashing, blinking, rotating, chasing, or rapidly changing in color or intensity is prohibited.

15.06.050: Violations, Legal Actions, and Penalties

Violations, Legal Actions, and Penalties are determined by Winthrop Municipal Code Title 15.08.100.

15.06.060: Notification

- A. The town building and planning department permits shall include a statement asking whether the subject property of the proposed work includes any exterior lighting.

15.06.070: The Town's Role

- A. The town will commit to changing all lighting within the town rights of way and on town owned property to meet the requirements of this Chapter when luminaires expire.

15.06.080: Definitions

Area lighting

An elevated light used to illuminate any outdoor space, such as a park, a street, a parking lot, a yard, or a driveway.

Administrator

Any one or more of the following persons shall be known in this document as the "Administrator":
The Mayor of Winthrop, members of the Town Council, building officials, and/or the town administrator(s).

Canopy

A covered, unconditioned structure with at least one side open for pedestrian and/or vehicular access. (An unconditioned structure is one that may be open to the elements and has no heat or air conditioning.)

Correlated Color Temperature (CCT)

A measurement of the color appearance of a lamp or luminaire. The units of CCT are degrees Kelvin, where degrees Kelvin are the primary unit of temperature used in the physical sciences. A lamp or luminaire with a CCT of 2700 degrees Kelvin emits an orangish glow similar to (i.e., correlated to) an ordinary long-life incandescent filament heated to a temperature of 2700 degrees Kelvin, (equal to 2427 degrees Celsius or 4400 degrees Fahrenheit). The higher the CCT, the more blueish the light appears. Animals are particularly sensitive to blue light at night, hence the interest in using lights with low CCT ratings at night.

Emergency Lighting

Generally, lighting that is only energized during an emergency; lighting fed from a backup power source; or lighting for illuminating the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm.

Excessive Lighting

Unnecessary or excessive lighting. Light should be used where it is needed, when it is needed, and with an intensity and type that is needed.

Floodlight

An unshielded reflector bulb of less than 1000 lumens used to illuminate a residential space, such as a yard, carport, driveway or building entrance.

Footcandle

A measure of light illuminance, or intensity, taken at one spot or region. The footcandle is a local measure of intensity, as opposed to a lumen, which is a measure of a total quantity light that may be radiated in multiple directions. One footcandle was originally defined as the intensity of light falling onto a white card located one foot (twelve inches) from a standard candle. In more modern terms, one footcandle equals exactly one lumen per square foot, or 10.76 lumens per square meter.

Full Cutoff Fixture

A luminaire constructed and installed such that all light emitted by the luminaire, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, projects below a horizontal plane centered at luminaire's lowest light-emitting part.

An 85-degree full cutoff fixture (Figure 3) is constructed and installed such that all light is contained within a downward-pointing cone centered at the luminaire's lowest light-emitting part and having its sides oriented 85 degrees from vertical.

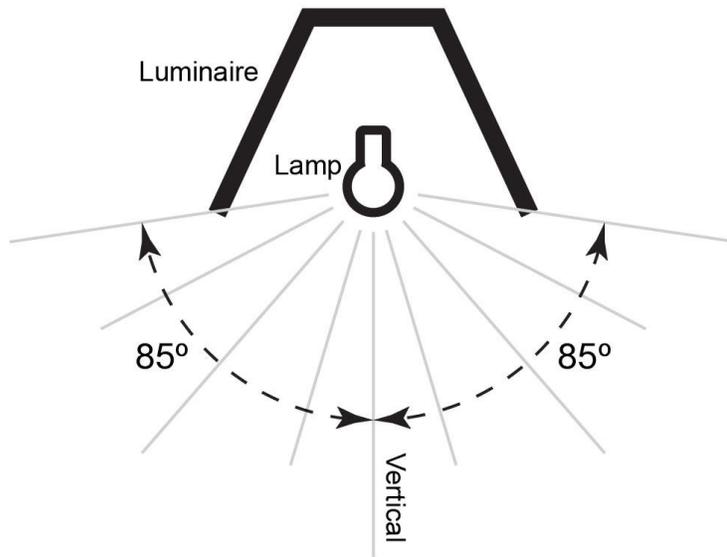


Figure 3—An 85° Full Cutoff Fixture emits light only within a downward-pointing 85° cone.

Glare

Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.

IESNA, also known as IES

Illuminating Engineering Society of North America.

Lamp

That part of a luminaire that actually produces light, such as a light bulb, an LED, or an electric arc.

LED

Light Emitting Diode. More energy efficient than incandescent bulbs.

Light Trespass

Light emanating from one property that falls onto another property where it is not intended or needed.

Lighting

“Electric” or “man-made” or “artificial” lighting.

Lumen

The unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption). For example, a standard candle emits a little more than 12 lumens. One 60-Watt ordinary soft-white incandescent bulb emits approximately 800 lumens. The lumens emitted from one bulb (or lamp) can be reduced by the diffusion and shielding elements of a complete luminaire, but never increased.

Luminaire

The complete lighting unit (fixture), consisting of a lamp, or lamps and ballast(s) (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply. A luminaire may be freestanding, like a streetlamp, or mounted, as a light in front of a garage.

Mounting height

The height above grade level of the luminaire's lowest light-emitting part.

New Exterior Lighting

Lighting installed for outdoor areas not previously illuminated, or additional lighting installed for outdoor areas that are already illuminated. Exception #1: The replacement of the lamp with a lumen rating equal to or less than the original bulb. Exception #2: The repair of any luminaire that restores it to its original operating condition.

Outdoor Lighting

Lighting equipment installed within the property line and outside the building envelopes, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.

Sign

Advertising, directional or other outdoor promotional display of art, words and/or pictures.

Sky Glow

The brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Sky glow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.

Temporary lighting

Lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.

Up Lighting

Lighting designed to cast light in an upward direction anywhere above a horizontal plane centered at luminaire's lowest light-emitting part.

15.06.90 Appendix A - Referenced Codes⁸

2019 Okanogan County Code 17A. Zoning, including: 17A.190 (Special Review Commercial), 17A.240.010 (Off Street Parking and Loading), 17A.150 (Low Density Residential), 17A.130 (Methow Review District), 17A.140 (Rural Residential), and 17A.180.110 (Neighborhood Commercial), as follows:

Light and Glare: Outdoor Lighting, including street and parking lot lighting, shall be directed downward and shielded to minimize potential glare to motorists and offsite residents. No exterior light with a direct source visible from a neighboring property shall be installed.

2019 Winthrop Municipal Code Title 15.08.260.B (Buildings and Construction, Westernization, Design and Material Standards—Exterior Lighting), as follows:

Exterior lighting shall be shrouded to cast light in a downward direction forty-five (45) to ninety (90) degrees below horizontal. A light bulb or other source of illumination shall not be visible when viewing a light fixture horizontal to the bottom edge of the fixture shroud or enclosure. All lighting must be placed so as not to interfere with safe vision upon the public roadways and pedestrian walkways.

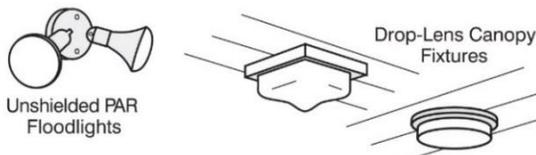
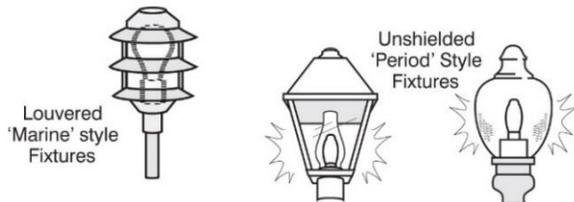
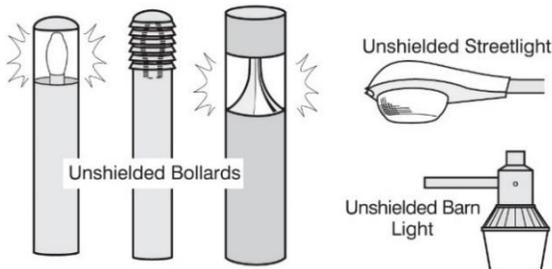
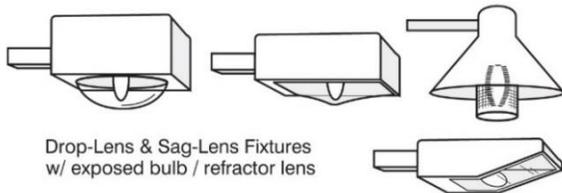
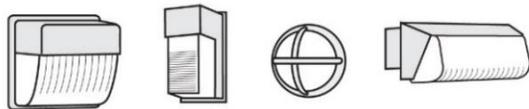
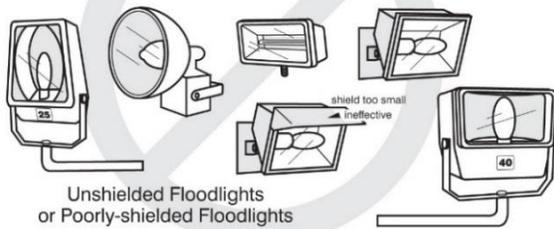
⁸ We need a statement here that the code in appendix A is listed here for convenience only. The referenced codes may change without our knowledge, in which case the most-recent version will apply.

Figure 1—Lighting Fixture Guidelines

Examples of Acceptable / Unacceptable Lighting Fixtures

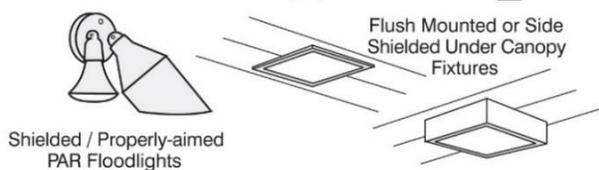
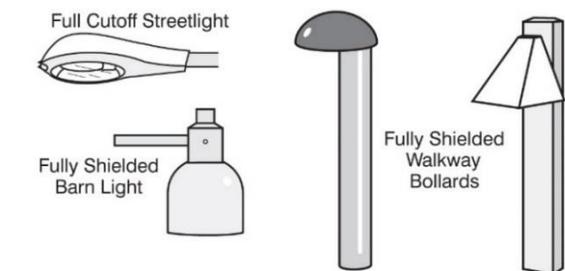
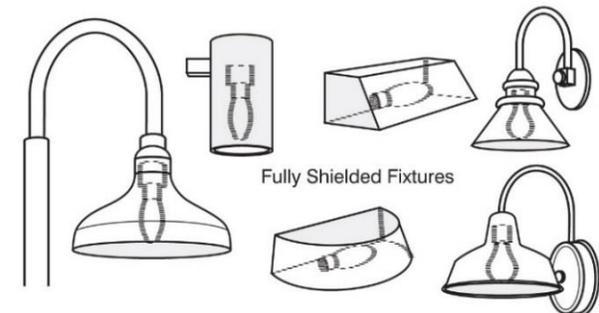
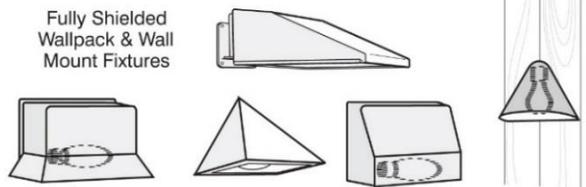
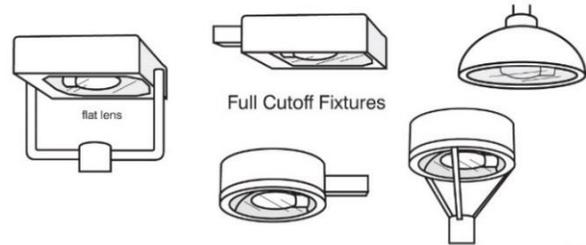
Unacceptable / Discouraged

Fixtures that produce glare and light trespass



Acceptable

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



Illustrations by Bob Crelin © 2005. Rendered for the Town of Southampton, NY. Used with permission.