



Boulder County  
Land Use Department  
Publications



# Outdoor Lighting Requirements

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## Outdoor Lighting Requirements

This informational publication is intended to help explain the importance of effective, quality lighting with regards to the Boulder County Outdoor Lighting Requirements. The Boulder County Land Use Department hopes to better convey why the County has adopted these regulations, and to offer examples of acceptable lighting fixtures designed to minimize light pollution while preserving the safety, security, nighttime use, and enjoyment of property ownership.

### What is Light Pollution?

Light pollution is light that is obtrusive and wasteful. Examples of light pollution include skyglow, light trespass, and glare.

#### Skyglow

The night sky has been a resource and part of the quality of life in Boulder County since this area was first settled. However, over the years the night sky has slowly diminished due to unnecessary light and glare from inappropriate lighting. The importance of the sky in any rural area, and particularly in a place as beautiful as Boulder County, is immeasurable. Skyglow is the wasted light shining skywards and reflecting out into the atmosphere. Skyglow decreases the ability to see stars and other astronomical elements. It can even reduce the ability to see the mountains. Full cut off shields over the light source directs light to where it is needed and reduces this wasted uplight.

#### Light Trespass

Light trespass is light that is distributed onto areas where the illumination is not wanted. Light intruding into neighboring homes and properties can keep people awake at night and destroy the sense of privacy. Complaints against "security" floodlights have increased dramatically over the years. Effective, quality lighting includes appropriate amounts in the appropriate place at the appropriate times.

#### Glare

Overly bright and poorly aimed lights cause glare, which is the most safety-related aspect of light pollution. Many people assume that a bright light (the brighter, the better) attached to an outside wall will deter criminals. However, the brighter the lights, the more difficult it is for the eye to adjust properly thus limiting the ability to detect possible intruders as quickly. Bright but unevenly distributed lighting often creates deep shadows where, due to the striking contrast, such intruders can hide. Shielded, evenly-distributed lighting reduces glare, harsh brightness, and deep shadows and can provide a safer environment.



Example of Bad Lighting.

#### Bad Lighting

- ✓ Contributes to skyglow with upward direction of light, reducing enjoyment of the night sky.
- ✓ Causes glare, light trespass, and harsh illumination.
- ✓ Wastes Energy



Example of Good Lighting.

#### Good Lighting

- ✓ Directs light down and to the sides as needed; light control.
- ✓ Reduces glare; more even illumination.
- ✓ Does not trespass onto neighboring property.
- ✓ Helps preserve the dark night sky.
- ✓ Cost Efficient.

## Other Lighting Related Issues

### Environmental and Economic Costs

Minimizing light pollution saves precious energy resources and reduces energy costs. In the United States alone, it is estimated that at least \$1.5 billion dollars is wasted annually on the electricity for outdoor lighting that is emitted towards the sky. The production of this amount of electricity is equivalent to the burning of 6,000,000 tons of coal.

### Effect on Wildlife

Lights attract and disorient animals. It can upset their biological patterns, affect their breeding cycles and deter them from established foraging areas. Trees are also affected; artificial light can prevent them from adjusting to seasonal variations. Light should be directed where it is needed.

## Outdoor Lighting Requirements

Any outdoor lighting used for the illumination of parking areas, landscaping, residences, recreation areas, or for any private or public purpose, shall be arranged in a manner to meet the following conditions:

- ✓ Lights shall be fully shielded and downlit. The shield must be opaque so that no light can pass through it.
- ✓ Neither the direct or reflected light from any light source may create a traffic hazard to operators of motor vehicles on public roads, and no colored lights may be used in a way that could be confused or construed as traffic control devices.
- ✓ No blinking, flashing, or fluttering lights, or other illuminated device which has a change in light intensity, brightness, or color, and no lighting which exceeds 12 feet in height is permitted in any zoning district, except for temporary holiday displays, or as required by local, state, or federal regulations.
- ✓ Please note that the lighting requirements in the **Niwot Rural Community District (NRCD)** or as adopted through specific **Special Use** approvals may be more restrictive. If your property is located in the NRCD or is governed by a Special Use approval, please refer to the appropriate development plans.

To review the outdoor lighting requirements in its entirety, please see **Article 7-1600** of the Boulder County Land Use Code which can be viewed online at: [www.BoulderCounty.org](http://www.BoulderCounty.org).

### Getting Exterior Lighting Approved

All new exterior lighting fixtures must be approved before a building permit can be issued. Lighting plans should clearly indicate where every outdoor fixture is proposed, including landscape lighting. A depiction of the lighting fixture should be submitted in the form of a picture or manufacturer's cut sheet. If the proposed fixture is a recessed soffit light, please indicate that clearly on the lighting plan.

Lighting fixtures can be purchased that are approved by the International Dark-Sky Association, although not every Dark-Sky approved fixture meets the Boulder County lighting requirements. Another option is Dark-Sky approved shields that can be inserted into compatible lighting fixtures. However, some fixtures with shields may still not meet the Boulder County exterior lighting code. It is always best to check with Land Use staff to determine if a proposed fixture can be approved.

Every installed lighting fixture, including those that have shields or have been altered in any way, must be UL (Underwriter's Laboratories) listed. In addition, shields or other components added to the lighting fixture must be UL listed. Please be sure to keep the manufacturer's information (box, instructions, etc.) available for the electrical inspection as it may be needed to confirm the fixture complies with the electrical code.

## Examples of Down Lighting Fixtures

