

## Information Sheet: EXTERIOR LIGHTING

Gunnison County residents and visitors enjoy the dark skies of our mostly-rural landscape. Regulations for the unincorporated areas of Gunnison County are included within a section of the *Gunnison County Land Use Resolution* and are intended to protect those dark skies while ensuring that property owners are able to have lighting systems that provide adequate security. The following section from the *Resolution* regulates locations, types and sizes of lighting fixtures.

The attached "Is Gunnison's Night Sky Worth Saving?" provides additional information about protecting the dark sky, and about types of fixtures that help accomplish that.

### SECTION 13-114: EXTERIOR LIGHTING

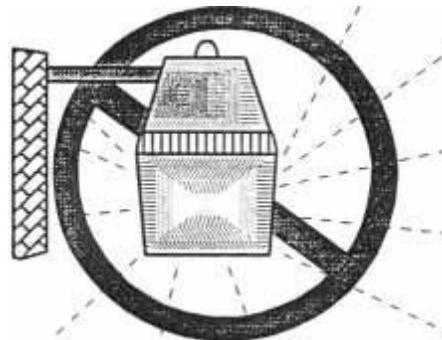
**A. PURPOSE.** The purpose of this Section is to provide standards for exterior lighting that assure the safety, utility and security appropriate to development and that prevent night lighting that adversely impacts adjacent properties and neighborhoods or unduly illuminates the night sky enjoyed by residents and visitors of Gunnison County. A secondary purpose is to avoid exterior night lighting that distracts and interferes with safe, quick and accurate vision of drivers and pedestrians. (Illustrations in this Section are courtesy of Dark Sky, International, and the New England Light Pollution Advisory Group (NELPAG).)

**B. APPLICABILITY.**

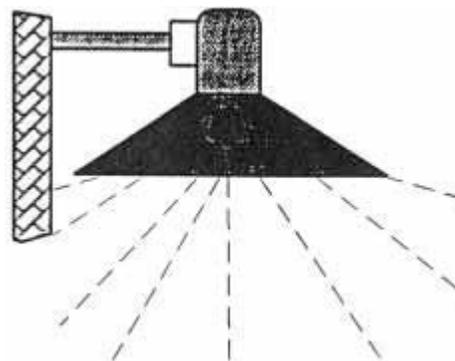
1. **GENERAL.** Except as otherwise exempted by this Section, the requirements of this Section shall apply to all land uses in Gunnison County, subject to Section 1-106: *Partially Exempted Land Use Changes*, and Section 1-108: *Nonconforming Uses*.
2. **EXEMPTIONS.** The following uses are exempted from the requirements and review standards of this Section:

- a. **AGRICULTURAL OPERATIONS.** Exterior lighting whose primary purpose is essential to the efficient functioning or security of an agricultural operation shall be exempted from the standards of this Section, though agricultural operations are encouraged to comply.

**Figure 9: Prohibited and Allowed Fixtures Related to Shielding**



**Exterior lighting fixtures that are not fully cut-off, or fully-shielded by a roof element are prohibited.**



**Only those exterior lighting fixtures that are fully cut-off, fully shielded, or are shielded by a roof element are allowed.**

*Illustrations courtesy International Dark Sky Association.*

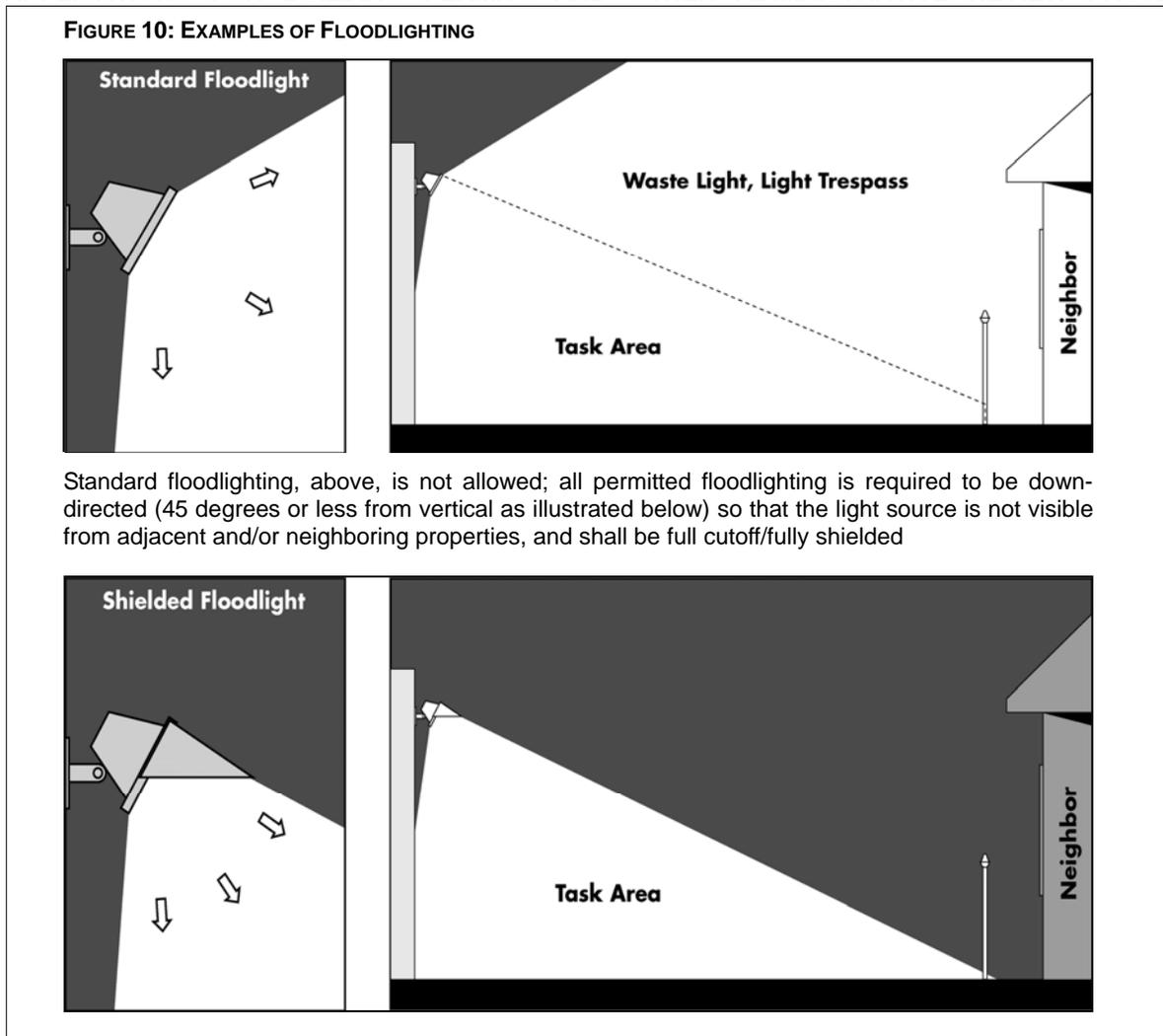
- b. **FEDERAL, STATE AND COUNTY CONSTRUCTION PROJECTS.** Federal, state and County construction projects, during the course of construction.
  - c. **SPECIAL EVENTS.** Lighting that is temporarily installed or operated as part of a special event, pursuant to Section 9-501: *Special Events*.
  - d. **EMERGENCY LIGHTING.** Lighting fixtures used temporarily for emergency purposes.
  - e. **SPECIALIZED LIGHTING.** Lighting necessary for public safety, such as runway lighting of airports, and traffic control signals.
- C. **NONCONFORMING FIXTURES.** Fixtures that were nonconforming as of July 1, 2004, shall be replaced when:
- 1. **LIGHT IS DAMAGED BEYOND REPAIR.** When the light fixture is damaged beyond repair and must be replaced, it shall comply with the standards of this Section.
  - 2. **STRUCTURE IS EXPANDED OR REPLACED.** When a structure is replaced, or expanded by 50 percent or more of square footage as calculated by the applicable building code adopted by Gunnison County, all light fixtures shall be replaced and shall comply with the standards of this Section.
- D. **STANDARDS.** Exterior lighting shall meet the following standards:
- 1. **EXTERIOR LIGHTING FIXTURES SHALL BE FULL CUTOFF/FULLY-SHIELDED, SHIELDED BY ROOF ELEMENT OR EFFECTIVELY RECESSED.** Except as otherwise restricted in this Section, all exterior lighting fixtures, including those used to illuminate roadways, parking lots, walkways and buildings, used for residential, commercial, or industrial purposes shall be of the full cutoff/fully-shielded type or be shielded by a roof element so that there is the effect of a full cutoff/ fully-shielded light fixture. All fixtures that are installed in recessed locations shall maintain this full-cutoff/fully-shielded characteristic.
  - 2. **EXTERIOR LIGHTING LIMITED TO FUNCTIONAL USES.** Exterior lighting shall be limited to functional applications such as illumination of doorways, garage doors, decks, terraced levels, walkways or hot tubs and recreational areas when in use.
  - 3. **MOTION SENSOR LIGHTS ALLOWED FOR COMMERCIAL, INDUSTRIAL OR RESIDENTIAL ACCESS FOR SECURITY PURPOSES.** A maximum of two motion sensor fixtures is allowed as reasonably required to provide lighting for access security. These are permitted where the sensor will be triggered by activity only within the owner's property lines.
  - 4. **FLOOD LIGHTING LIMITED.** Floodlighting is only permitted when it is down-directed (45 degrees or less from vertical as illustrated in Figure 10: *Examples of Floodlighting*) so that the light source is not visible from adjacent and/or neighboring properties, and shall be full cutoff/fully shielded. Ground-mounted floodlighting of a structure is prohibited.
  - 5. **HEIGHT LIMITATION FOR POLE-MOUNTED FIXTURES.** Pole-mounted fixtures (as measured from grade to the bottom face of a fixture) shall be no higher than 35 feet and the fixture shall be a full cutoff/fully shielded, non-adjustable and directed down.
  - 6. **ILLUMINATION OF BUILDING FAÇADE AND LANDSCAPING PROHIBITED.** Lights that are used for the primary purpose of illuminating a building façade or landscaping are prohibited except for illuminating a building entrance, or for other purposes required by the *National Electrical Code*.
  - 7. **BLINKING, FLASHING AND LIGHTS OF CHANGING INTENSITY PROHIBITED.** Blinking, flashing or exterior lights that change in intensity are prohibited, except for temporary holiday displays, traffic control devices authorized by a federal, state or local government, or lights required by regulations of the Federal Aviation Administration for air traffic control and warning purposes.
  - 8. **INTERFERENCE WITH SAFE MOVEMENT OF MOTOR VEHICLES PROHIBITED.** No exterior lighting shall be installed or used in any way that interferes with the safe movement of motor vehicles. The following are prohibited:
    - a. **LIGHTING NOT DESIGNED FOR ROADWAY OR PEDESTRIAN WAY.** Any exterior lighting not designed for roadway or pedestrian way illumination that produces incident or reflected light that could be disturbing to the operator of a motor vehicle; and
    - b. **LIGHTING THAT MAY BE CONFUSED WITH TRAFFIC CONTROL DEVICES.** Any exterior lighting that may be confused with, or may be construed to be a traffic control device, except as authorized by a state, federal or local government.

**9. MERCURY VAPOR LIGHT FIXTURES.** Installation of new mercury vapor light fixtures is prohibited, and replacement of mercury vapor light fixtures existing as of July 1, 2004 with fixtures that comply with the standards of this Section is encouraged.

**10. TEMPORARY HOLIDAY DISPLAYS.** Winter holiday lighting shall be allowed between November 15 and March 30. All other lighting associated with any national, local or religious holiday or celebration shall be allowed two weeks before the holiday, and extinguished within two weeks after the holiday. A waiver from these time restrictions may be requested from the Board, which may elect to conduct a public hearing on the request before making its decision. The applicant shall be billed and shall be responsible for paying for the actual cost of publication of all applicable public hearing notices as required pursuant to Section 3-112: *Notice of Public Hearing*.

**E. SUBMITTAL REQUIREMENTS.** Applications for Building Permits and other Land Use Change Permits shall submit information about exterior lighting as follows:

**1. APPLICATIONS FOR BUILDING PERMITS AND OTHER ADMINISTRATIVE REVIEW PROJECTS.**



Activities and uses that are classified as Administrative Review projects pursuant to Article 4: *Administrative Review Projects That Do Not Require Land Use Change Permits*, including projects that require only a Building Permit, and Article 5: *Administrative Review Projects That Require Land Use Change Permits*, when such projects involve uses that reasonably would include lighting shall include:

- a. LOCATIONS OF LIGHTING FIXTURES.** The locations of exterior lights on the building(s) and/or other activity or use on the property for which the application is submitted.
- b. DESCRIPTION OF TYPES OF LIGHTING FIXTURES.** Description(s) of the lighting fixtures, demonstrating how lighting fixtures will comply with this Section.

2. **MINOR AND MAJOR IMPACT PROJECTS.** Each application for a Land Use Change Permit classified as a Minor or Major Impact project pursuant to Article 6: *Minor Impact Projects* and Article 7: *Major Impact Projects* shall submit a plan for exterior lighting as follows:
  - a. **MINOR IMPACT PROJECTS.** When a proposed land use change is classified as a Minor Impact project, its application shall include a proposed plan for exterior lighting when any of the following is proposed as part of the development:
    1. **RESIDENTIAL USES.** Residential development.
    2. **NON-RESIDENTIAL USES.** Non-residential uses intended to serve people or otherwise operate during non-daylight hours. Flat glass lens, eliminates or minimizes direct glare, has no upward throw of light.
    3. **MIXED USES.** A development that mixes residential and non-residential uses.
  - b. **MAJOR IMPACT PROJECTS.** Any proposed Land Use Change Permit application that is classified as a Major Impact project shall include an exterior lighting plan.
  - c. **ELEMENTS OF EXTERIOR LIGHTING PLAN.** The following elements shall be included within an exterior lighting plan:
    1. **COMPLIANCE WITH REQUIREMENTS OF APPLICABLE ELECTRICAL PROVIDER.** The exterior lighting plan shall be designed pursuant to the requirements of the electric association or municipality that will serve the development. The standards in the IES Lighting Handbook may also be used as guidelines. The plan shall address the following:
    2. **LOCATION AND TYPE.** The locations of exterior lights within the development, and the type of lighting devices, fixtures, lamps, supports, reflectors and other devices;
    3. **DESCRIPTION.** A description of the lighting devices, fixtures, lamps, supports, reflectors and other devices; the description may include photographs or illustrations by manufacturers; and
    4. **METHOD OF SHIELDING.** Photographs or other illustrations by manufacturers of the fixtures demonstrating how lighting fixtures will be shielded to comply with this Section.



## Is Gunnison County's night sky worth saving ?

We think so.

### **Do you like Gunnison County's dark night sky and bright stars? Do you like the rural character of Gunnison County?**

One of the reasons you have moved to Gunnison County is probably because of the beautiful environment—including the dark skies.

Today Gunnison County is a lightly populated rural area with spectacular night skies. Many Gunnison County residents want to preserve this unique part of our community. Good lighting does its intended job well and with minimum adverse impact to the environment.

You can do your part to help preserve this resource by installing well designed outdoor lighting. Unshielded lights broadcast glare for tens of miles. An unshielded yard light viewed across one of our valleys through our crystal clear air is many times brighter than the brightest star. Upward directed stray beams from unshielded or poorly-shielded lights reflect from particles in the atmosphere and cause 'sky glow' that obscures the millions of dimmer stars.

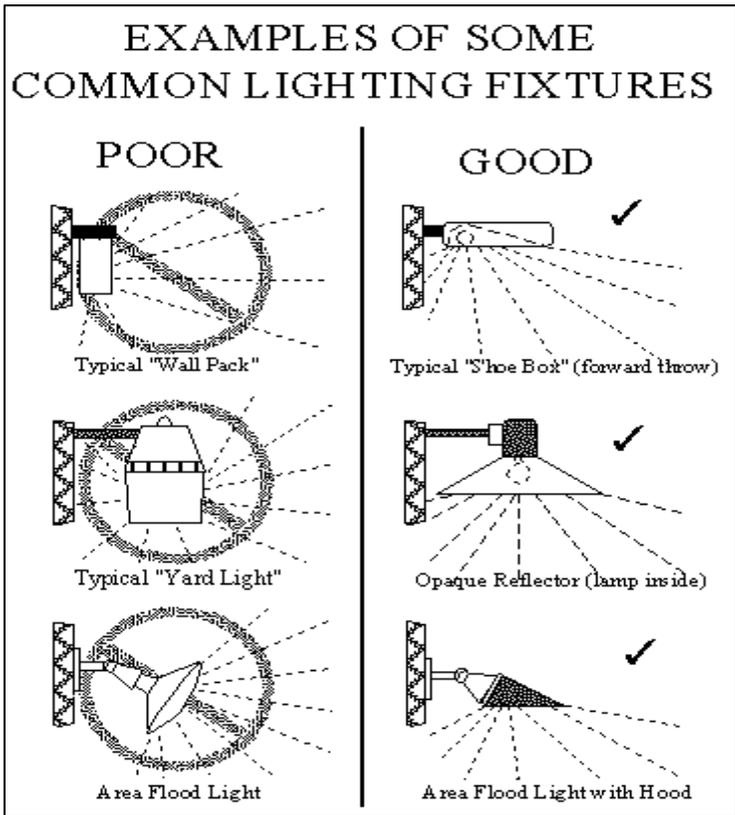
**Good lighting at night benefits everyone.** It provides us with better visibility for nighttime chores and a sense of security.

Most of us want some outdoor lighting, so what do we do? The answer is relatively simple... It's the same principle as putting a lamp shade over a bare bulb. Our regulations allow use of unshielded fixtures with 60-watt bulbs or less. (Any bulbs of greater wattage are required to be shielded.) We're asking the folks who put up new lights to use lights with a hood or shield that will direct the light down to the ground where it is needed and not up into the sky or across the valley their at neighbors.

Some modern lighting systems illuminate areas to a level 100 times as bright as the full moon! Too bright an area on the ground can cause GLARE where people or objects in the shadows become invisible. Careful positioning of light fixtures will also maximize the effectiveness of the illumination.

Fixtures should be positioned to give adequate uniformity of the illuminated area. A few bright fixtures (or ones that are too low to the ground) can often create bright "hot spots" that make the areas in between seem dark.

Even well shielded fixtures placed on tall poles on a property boundary can cast a lot of light onto neighboring properties.



“**Light trespass**” greatly reduces and invades privacy and is difficult to resolve after the installation is complete. To reduce both operating costs and save energy, use high efficiency lights such as high pressure sodium or metal halide. Both of these cast a more yellowish light and are easier on human eyes.

#### Some Basic Considerations:

Lighting should *benefit people*. Controlled, effective, efficient lighting at your home or business will enhance the surroundings and give a sense of safety and security. People don't appreciate poorly-installed, overly-bright lighting.

Check your site at night before installing lighting and note the existing light levels. If the area has low levels of lighting, then modest levels of light will work well for you and will fit more hospitably in the neighborhood.

Try to keep the lighting uniform and *reduce glare* as much as possible. Lights that make bright "hot spots" and ones that have glare make it hard to see well.

Be aware that light fixtures can have different lighting patterns. (Some patterns are long and narrow light cones, while others are more symmetrical.) Install the right pattern for your job.

Consider using lights that turn on by motion detection to save operating costs and have the benefit of "instant-on" characteristics. Some can also be turned on manually. These light fixtures are not expensive, and they use very little energy.

Retrofit existing fixtures:

