

Why do we have a lighting ordinance? (p. 1)

The City of Madison regulates exterior lighting to improve the quality of the night time environment, and to avoid conflict between neighbors caused by poor lighting. Madison Municipal Ordinance 10.085 applies to all outdoor lighting installed on residential property.

Like many other things, how we use exterior lighting on our own property can affect our neighbors and other City residents. Glare from poor lighting has the potential to cause severe problems because of its effect on the dark-adapted eye. Problems associated with glare can include transient night blindness in drivers and pedestrians, and more pervasive visual problems associated with night vision in the older eye.

High levels of illumination caused by over-lighting create many problems. For example, over-lit surroundings can create security problems when the eye fails to adapt to seeing in adjoining dark areas and shadows, compromising personal security and safety. High illumination levels can also deprive residents of the darkness needed for sound sleep, while the cumulative illumination of a large city brightens the night sky for surrounding communities, changing their rural character and robbing them of the stars.

Madison's exterior lighting ordinance was enacted to encourage

the wise use of exterior lighting to provide enough light for a safe nighttime environment, without wasting energy and creating nuisance, while avoiding the problems described above.



Applicability (p. 2)

Madison's municipal exterior lighting ordinance is written to prevent:

- * Skyglow - light spilling into the night sky
- * Light Trespass - glare and spill light caused by exterior lighting that shines onto neighboring property

Any exterior light fixture with a light source (bulb) brighter than 1,000 lumens must meet the requirements of the ordinance. Light fixtures installed prior to enactment of the ordinance (March 1993) are exempt from its provisions. Subsequent amendments to the ordinance only apply to fixtures installed or modified after the date of the amendment.

Lumens

A measure of light output that is consistent for all types of light sources.

Examples of common residential light sources with less than 1,000 lumens brightness are: 60W incandescent, 15W fluorescent, 23W CFL and 50W halogen.

The lumens of a light source are usually given by the bulb manufacturer on the product packaging.

Architectural Lighting

In addition to choosing fixtures to prevent light trespass and glare, lights used to illuminate buildings (rather than entries, sidewalks, etc.) are limited to a maximum connected lighting load of five watts per lineal foot of building facade. Lights used for this purpose must be installed so as to illuminate only the building, and not the night sky. Flood lights should not be used to illuminate parking areas away from a building.



Madison's skyglow as seen from Dodgeville

About this brochure

This brochure explains the provisions of the ordinance, and offers some suggestions on how to comply with it.

If you require more detailed information about the ordinance, the exact ordinance language is available from:

- * City of Madison Web site
- * City Building Inspection Office
- * Madison Public Library

Visit relevant Web sites:

- * Wisconsin Dark Sky: darkskywisconsin.uwex.edu
- * International Dark Sky Association: darksky.org

Brochure design by Lauranne J. Bailey
- Revised June 2017

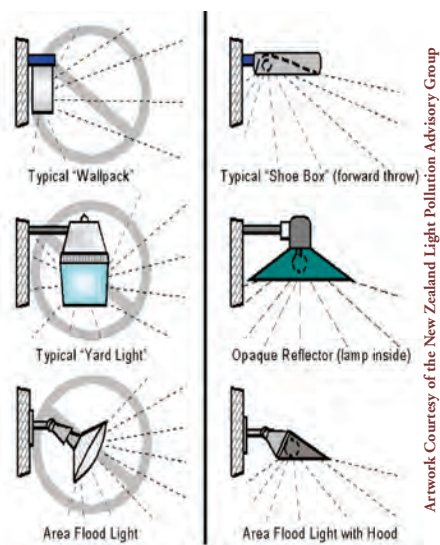


A Guide for Residential Properties

UW Extension

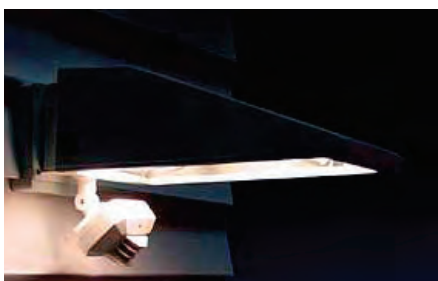
Shielding the light source (p. 3)

All exterior light sources greater than 1,000 lumens must be shielded so that the light source is not visible from any point higher than an angle 4° above the horizontal. This means that if your eye is above the fixture, you should not be able to see glare from the light source or lens.



Unshielded vs. shielded

In most cases, meeting this provision means that a light source must be enclosed in a non adjustable shield that is aimed downward. Exterior lighting that is mounted underneath an eave or soffit may also meet the definition of shielded, if light from the source does not rise more than four degrees above the horizontal.



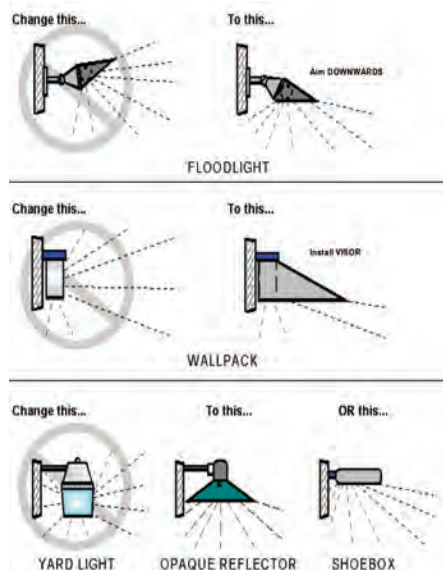
Motion sensor light

Preventing light trespass (p. 4)

Madison's municipal exterior lighting ordinance limits the amount of glare and spill light that falls onto other property from light sources on your property. In the following two cases, the city building inspector makes the determination when a lighting complaint is made:

- 1) Light trespass (from any number of light sources) cannot exceed 0.5 footcandle. The illumination amount (in footcandles) must be measured using a light meter, either at a point ten feet past the adjoining property line, or at a point four feet above the ground (or higher) on an occupied structure.
- 2) There cannot be a direct line of sight between other property and a light source (or its reflector) on your property, such that glare from the light source would cause discomfort or annoyance on the other property.

Footcandle
A measure of the illumination emanating from a light source.
The dark-adapted eye can see the light of a candle 10 miles away.



Modifications to eliminate glare and skyglow

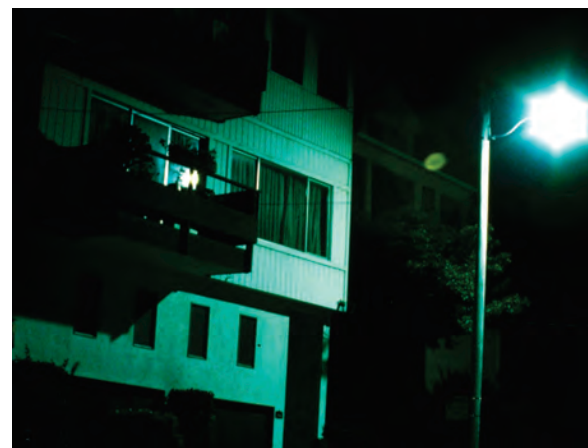
Does your lighting comply with the ordinance? (p. 5)

Although you may not own a light meter, or be able to estimate the lighting load for architectural lighting, determining if our lights cause glare, light trespass, or skyglow is as easy as taking a quick nighttime walk along our property line. Looking at your residence, do you see any of the following:

- * Can you see glare from your exterior lights?
- * Do any of your lights shine upward into the night sky?
- * As you walk along the property line, do your lights shine onto your neighbors property or the sidewalk?

Here are a few things you can do:

- 1) Permanently re-aim fixtures so that the light is directed only to the area you want to illuminate.
- 2) Add shields to existing fixtures to prevent glare and spill light, or replace your fixtures with shielded ones.
- 3) Replace an existing lamp with one that is less than 1,000 lumens.
- 4) Add motion sensors to all-night security lighting to light your entry when you come home or draw your neighbor's attention to prowlers.



Light trespass from a streetlight

What to do about other sources of nuisance lighting? (p. 6)

Once your own lighting complies with the ordinance, you may want to discuss the ordinance with a neighbor whose light is annoying you. Remember, most people are not aware that their light is a nuisance, and may not realize how easy it is to fix. Ask them to evaluate their exterior lights, just as you evaluated your own. Share with them how you modified your lights to improve the nighttime environment. Try to be helpful and supportive, and maintain neighborly relations.



Cutoff streetlight

If you find that exterior lighting from nearby residential or commercial property continues to cause annoyance, contact the City of Madison-Building Inspection Unit. Make a note of the location of the light fixture, the time of day it is normally lit, and your vantage point for viewing the problem light. An inspector will come by when it is dark and take the appropriate action to remedy the problem.

You may find that a street light is the cause of glare or over-lighting on your property. The City is installing cutoff streetlights as older fixtures fail. In some cases the streetlight may be replaced with a full cutoff streetlight before it has failed (although you will be asked to bear the cost). You should note the light's pole number (either a metal tag or block letters) and contact the City of Madison Traffic Engineering Division about streetlight problems.