

## Does Light Pollution Affect You?

**Light pollution** is light that shines where it is not needed or wanted. It also includes lighting that is too bright. Light pollution has several undesirable effects, including light trespass, glare, energy waste, and sky glow.

### Light trespass

Light trespass is light from somebody else's property lighting up your property, shining in your windows, or otherwise interfering with your enjoyment of your property. Your outdoor lighting should be shielded and aimed to keep the light on your own property as much as possible.

### Glare

Glare is the uncomfortable brightness of a light shining into your eyes, leaving you unable to see much of anything else (extreme examples include the setting sun and oncoming headlights). Glare always reduces visibility, is annoying, and can be hazardous. Avoid creating glare.

### Energy Waste

Typically, 30 to 50% of the light we produce is never used, shining sideways or upwards instead. Misdirected light, using too much light and leaving lights on all night when nobody is around, are all wastes of energy.

### Sky Glow

Sky glow is stray light in our atmosphere that can be seen over 100 kilometres away. The stray light mostly comes from poorly-designed and improperly-aimed light fixtures, and from light reflected from over-lit areas.

## Did You Know?

Crime studies show **there is no relationship between lighting and crime** – lighting only reduces our *fear* of crime! Criminals say signs of occupancy, difficult entry, dogs, and alarms are deterrents. Police data show that most break-ins occur when the occupants are away (home break-ins during the day; business break-ins at night) and that most assaults occur between people who know each other.

Medical research has linked nighttime lighting to breast and prostate cancers and it also disturbs the immune and hormone systems. Our bodies need nighttime darkness for good health.

Glare and over-lighting always reduce visibility. The aging eye is two to three times more sensitive to the detrimental effects of glare.

Millions of migrating songbirds die annually in North America when they fly into office towers that are lit all night when no one is there.

An incandescent porch light wastes about ½ of its light by shining it upwards. In provinces where coal is used to generate electricity, up to 390 kg of carbon-dioxide is created by an all-night 100 watt porch light. That's enough carbon dioxide to fill 44,000, 20-cm (8") party balloons!

Groups concerned about night time ecology have spearheaded the creation of dark sky preserves across Canada and many communities have enacted responsible lighting principles.

For more information, visit  
[www.rasc.ca/lpa](http://www.rasc.ca/lpa), <http://calgary.rasc.ca/lp/>,  
and [www.darksky.org](http://www.darksky.org)  
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# RESPONSIBLE LIGHTING

Enhances Safety and Security

Reduces Energy Consumption

Creates a Healthier Environment



For . . . **Your Home**  
**Your Business**  
**Your City**

# Keys To Responsible Lighting

## RESPONSIBLE LIGHTING

By using outdoor lighting in a considerate and responsible way, we can enhance nighttime safety and security, create a healthier home, and reduce our impact on the environment. In short, we can improve the quality of our neighbourhoods.

Modern lighting methods require that we aim lights downward, which allows us to use lower wattage lights. This conserves energy and saves money. It also puts light where it is needed, without glare or light trespassing onto our neighbours' property.

The next time you are outside in the evening, look around at the nighttime lighting. You will quickly see that most exterior lights are poorly- aimed, glary, and too bright. These are the sources of light pollution.

Light pollution affects our health, reduces visibility, and wastes energy. However, the solutions are easy.



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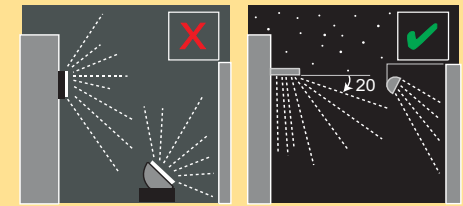
### THE GOLDEN RULES

**Use fully shielded fixtures and aim lights downward** to keep your light on your own property. This will reduce sky glow and solve most light trespass and glare problems.

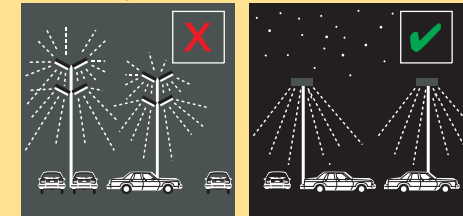
**Turn lights off when not needed (like your parents taught you!).** Most exterior building lights, area lights, and illuminated signs should be turned off overnight when very few people are out. This will save energy without affecting security.

**Use the right amount of light.** Too much light reduces your ability to see by making adjacent areas appear darker. This can be hazardous. Good lighting plans use carefully-aimed, fully-shielded, low-intensity lighting to create more uniform illumination. Good lighting plans provide better visibility and reduce energy consumption.

Direct all light downward, below 20° from horizontal.



Don't overlight.

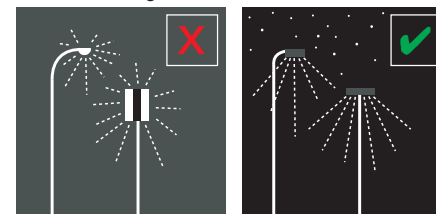


Use motion sensors to draw attention to intruders.



**'Security' Lights** create a false sense of security, but do not replace neighbourly surveillance. Instead of dusk-to-dawn, 'security' lights, use motion-sensor activated lights to enhance surveillance by drawing attention to trespassers. This is the same logic as the car alarm: the sensor turns lights on to call attention to a potential problem and to startle the intruder. Be sure to aim the sensor downward to guard only the area the lights illuminate.

Use shielded lights



**Parking and display lots.** Use fully-shielded fixtures. If fixtures must be installed at an angle, aim lights below 45°, and use accessory shields and louvers to stop glare and light trespass.

**Advertising.** Externally-illuminated signs with top-mounted, fully-shielded lights are preferred. Internally-illuminated signs should use lighter lettering on a darker background.

**Residential Lights.** Decorative, motion-activated fixtures are readily available and turn lights on only when needed. To minimise glare, use reflector or director light bulbs (aimed downwards) and half-mirrored or silvered light bulbs (base down). These directional lamps, as well as soffit lighting, provide good illumination without harmful glare. Since all of the light is directed downwards, you can use a 40- or 60-watt lamp, which minimises energy consumption.



Half-Mirror Bulb

Director Bulb

*Take a few moments now to assess your lighting and correct it.*