

OUTDOOR LIGHTING (2013)



Policy Statement

The American Society of Landscape Architects believes that outdoor lighting plays an important role in placemaking, way finding, safety, security, and the use and enjoyment of the natural and built environment. Improperly designed lighting can cause light pollution or a negative effect on humans, plants, and animals. Lighting should be regulated in land use plans and ordinances, which should reflect best practices that increase efficiency, reduce energy consumption, and improve aesthetics.

Rationale

An accepted part of the landscape, outdoor lighting has many important applications. It provides for the safe use and operation of roadways and pedestrian facilities, extends the use of outdoor areas, provides for safety and security, and enhances the viewing of significant monuments and cultural resources. Outdoor lighting may even be installed solely as temporary or permanent art works.

Improperly designed outdoor lighting can result in artificial looking landscapes, light pollution and the wasteful use of energy. Changes in technology have resulted in lighting fixtures that reduce energy consumption and improve color rendition but do not resolve many of the causes of light pollution from new or existing facilities.

The International Dark-Sky Association (IDA) recognizes four types of light pollution: light trespass; glare; clutter; and sky glow.

- **Light Trespass:** Trespass of night lighting is caused when improperly shielded light fixtures shed light outside of desired areas to be lighted.
- **Glare:** Glare is created by non-shielded fixtures and by light shining on reflective surfaces.
- **Clutter:** A proliferation of lighting fixtures from several sources create clutter, resulting in over lighting, trespass and glare.
- **Sky Glow:** Sky glow, created when lighting shines directly into the sky or is reflected from ground surfaces, is the result of these types of light pollution. Views of the celestial night sky in most urban areas are severely compromised or non-existent because of sky glow, denying people one of the most pleasurable and exciting natural visual experiences and an appreciation of how our planet fits within the solar system. As new development expands from urban areas into rural or undeveloped areas more of the night sky is obscured or obliterated by sky glow. The increase in sky glow has a negative impact on scientific study. Many observatories have been negatively impacted by sky glow from increased urbanization which may seriously reduce the effectiveness of the observatory for of many types of research.



Clutter and glare may decrease rather than enhance security and safety by increasing the contrast between light and dark areas, obscuring objects adjacent to the lighted areas, compromising night vision, and reducing or removing shadows that help the human eye detect movement.

Outdoor lighting has many negative impacts on human health. Light trespass into sleeping quarters may disrupt the body's circadian rhythms which affect the physiological processes of the body, the production of the hormone melatonin that regulates the daily cycles of human activity, or cause sleep disorders. The glare from some light frequencies causes eye fatigue. Glare from roadway lighting can cause disorientation rather than guidance.

Outdoor lighting affects wildlife by affecting circadian rhythms, reproduction, food foraging, night vision, migration patterns, protection from predation, and mortality rates.

A key determinant in the development of plants is photoperiodism, which controls vegetative growth and reproductive activities as governed by the lengths of day and night. Outdoor lighting can alter a plant's photoperiod, upsetting its development. Some frequencies of light can change a plant's flowering pattern or extend its day length, thereby promoting continued growth and delaying protective dormancy. The impacts of outdoor lighting on pollinators can affect the flowering of plants.

Mitigation of light pollution can be achieved by appropriate land planning and design, regulation through design ordinances and the design of lighting fixtures. The Illuminating Engineering Society and the IDA published the "Joint IDA-IES Model Lighting Ordinance (MLO) with User's Guide" (2011), which, in addition to lighting design standards, recommends lighting zones ranging from no ambient lighting to high ambient lighting. The guide recognizes that parts of the natural environment should not be compromised by the introduction of outdoor lighting. The guide addresses energy consumption by recommending that night lighting be metered and reduced or turned off when not needed. Roadway lighting is addressed in a separate section of the model.