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# The Night Sky & Light Pollution

Planning Commission  
January 27, 2016

# What is light pollution?

- Light pollution includes misdirected light, stray light, light during hours when it is not needed, and light levels in excess of what is necessary for the task.
- According to the Illuminating Engineering Society of America, light trespass complaints can usually be classified into two categories: (1) **unwanted light illuminating an area** or property and (2) **excessive brightness in the normal field of vision.**

# 5 Appalling Facts about Light Pollution

International Dark-Sky Association  
(darksky.org, October 21, 2015)

## **#5. The sky glow of Los Angeles is visible from an airplane 200 miles away.**

Residents of L.A. haven't been able to see the stars for a while. In fact some city dwellers don't even know what a natural night sky looks like. When a 1994 earthquake knocked out the city's power, many anxious residents called local emergency centers to report a strange "giant, silvery cloud" in the dark sky. What they were seeing – for the first time – was the Milky Way, long obscured by light pollution.





## #4. Artificial light at night disrupts the seasonal cycle of trees.

Even plants depend on the natural cycle of day and night. Artificial light at night can throw off a plant's response to the change of seasons. Prolonged exposure to artificial light prevents many trees from adjusting to seasonal variations.

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### #3. Light Pollution unnecessarily contributes to climate change.

In an average year in the U.S., outdoor lighting uses some 120 terawatt-hours of energy, mostly to illuminate streets and parking lots. That's enough energy to meet New York City's total electricity needs for 2 years. Unfortunately, up to 50 percent of that light is wasted. That adds up to \$3.3 billion and the release of 21 million tons of CO2 per year! To offset all that CO2, we'd have to plant 875 million trees annually.

### #2. Light pollution kills millions of birds a year.

Artificial lights can disrupt the migratory schedules of birds causing them to leave too early or too late in the season, missing ideal conditions for nesting. Birds that navigate by moonlight and starlight can wander off course. Millions die every year by colliding into needlessly illuminated buildings. Every year, the [Fatal Light Awareness Program](#) (FLAP) "displays" these victims of light pollution to raise public awareness.

# #1. Exposure to artificial light at night puts your health at risk.

Humans evolved with the rhythms of the natural light-dark cycle of day and night. Due to artificial light, most of us no longer experience truly dark nights. Like most life on Earth, we adhere to a circadian rhythm — our biological clock. Natural light is an important cue that helps us set our clock to Earth's 24-hour rotation period. Exposure to artificial light at night disrupts this process, increasing our risks for cancers and other potentially deadly diseases. **Blue-rich light at night is particularly harmful.** Unfortunately, **most LEDs used for outdoor lighting, computer screens, TVs, and other electronic displays emit abundant blue light.**





# Camas 2035

*The Camas Vision*  
Introduction

*Developing Camas 2035*  
Introduction

*Land Use Goals  
and Policies*  
Pg. 1-4

*Gateways and Entrys*  
Pg. 6-6

*Natural  
Beauty*

Future City policies  
will preserve trees  
and natural areas.

## Policy - Revisited

### Draft Environmental Policy-Camas 2035

- NE-1.6: Encourage the preservation of the night sky through dark sky standards in development regulations and design guidelines.

# Current design standards

## Camas Design Standard Manual

- Street lighting must be LED, cobra style on collectors and arterials, and be no higher than 30 feet.

## Design Review Manual

- For Commercial and mixed uses  
*“Outdoor lighting shall not be directed off-site”.*
- For Gateways

*“A consistent streetscape lighting shall be used.”*





# Possible Solution

## Model Lighting Ordinance (MLO)

- The MLO is designed to help cities develop outdoor lighting standards that reduce glare, light trespass and skyglow.
- MLO proposes to use five [lighting zones](#) to classify land use with appropriate lighting levels for each. Zones range from LZ0, designed for pristine natural environments and limited outdoor lighting, to LZ4, for limited application in areas of extensive development in the largest cities.



**Illuminating**  
ENGINEERING SOCIETY



**JOINT IDA - IES**

**MODEL  
LIGHTING  
ORDINANCE  
(MLO)**

**with USER'S GUIDE**

**June 15, 2011**

# Design Guide

- Always choose fully shielded fixtures that emit no light upward
- Use “warm-white” or filtered LEDs (CCT < 3,000 K; S/P ratio < 1.2) to minimize blue emission
- Look for products with adaptive controls like dimmers, timers, and motion sensors
- Consider dimming or turning off the lights during overnight hours
- Avoid the temptation to overlight because of the increased luminous efficiency of LEDs
- Only light the exact space and in the amount required for particular tasks

