

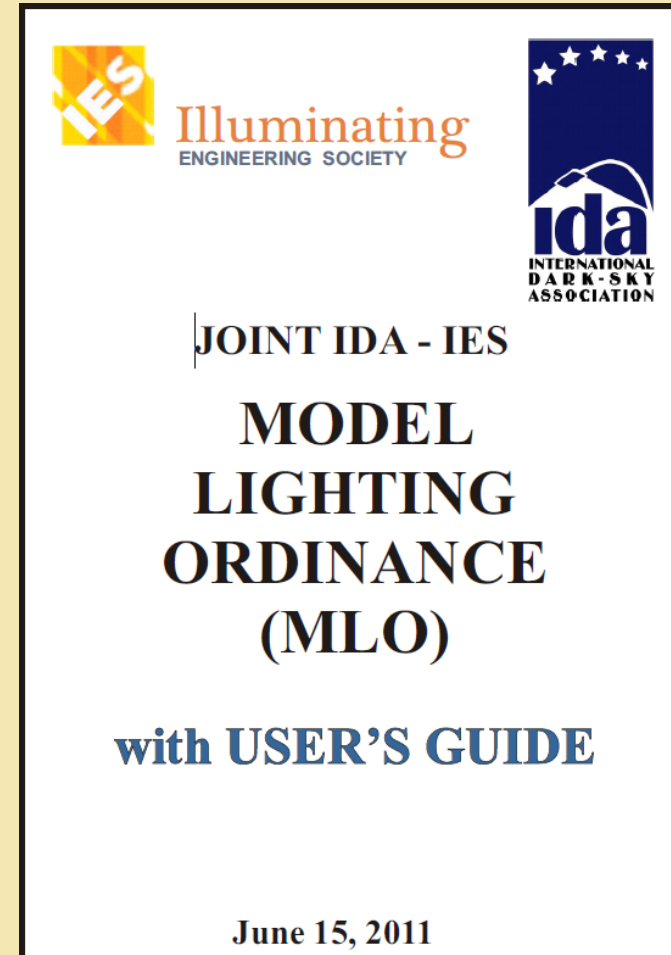


Principles for Responsible Outdoor Lighting

Chuck Bueter

LEED for Cities – South Bend

- **Light Pollution Reduction Credit**
 - minimize and manage ambient light
 - protect public health & ecological systems
 - increase night sky access
 - improve nighttime visibility
- Option 2: **Adopt a lighting ordinance** conforming to Model Lighting Ordinance developed by International Dark Sky Association & Illuminating Engineering Society.





Glare



Light Trespass



Sky Glow



Useful?



Useful?



Targeted?



Targeted?



Lake Bluff



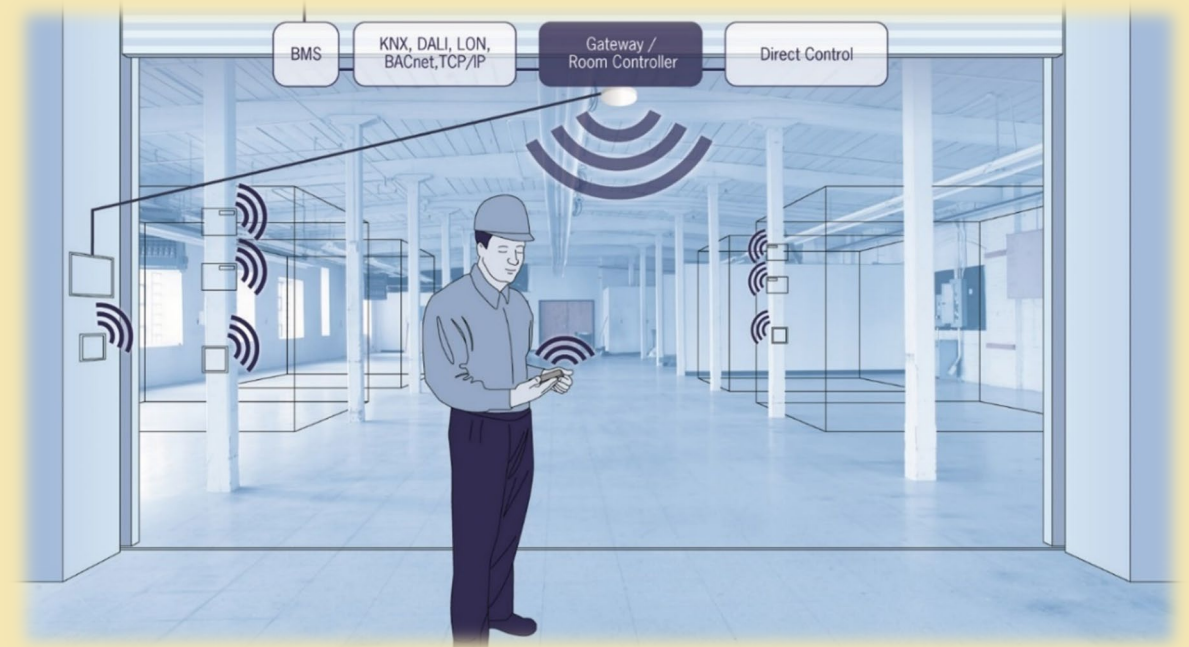
Mission Trails

Low Light Levels?



Controlled?

- Wireless Control Systems
- Dimming
- Color Temperature



Color?

LPS



HPS



LED 2400K



LED 4100K



LED 5100K



“IN ADDITION TO MAKING CHANGES TO SOURCES OF LIGHT, WE MUST CONSIDER OTHER POINTS OF LEVERAGE ON THE PROBLEM.”

[nature](#) > [scientific reports](#) > [articles](#) > article

Article | [Open Access](#) | [Published: 16 July 2021](#)

Air pollution mitigation can reduce the brightness of the night sky in and near cities

[Miroslav Kocifaj](#) & [John C. Barentine](#)

[Scientific Reports](#) **11**, Article number: 14622 (2021) | [Cite this article](#)

3530 Accesses | **11** Citations | **27** Altmetric | [Metrics](#)

Abstract

Light pollution is a novel environmental problem whose extent and severity are rapidly increasing. Among other concerns, it threatens global biodiversity, nocturnal animal migration, and the integrity of the ground-based astronomy research enterprise. The most familiar manifestation of light pollution is skyglow, the result of the interplay of outdoor artificial light at night (ALAN) and atmospheric scattering that obscures views of naturally dark night skies. Interventions to reduce night sky brightness (NSB) involving the adoption of modern lighting technologies are expected to yield the greatest positive environmental consequences, but other aspects of the problem have not been fully explored as bases for

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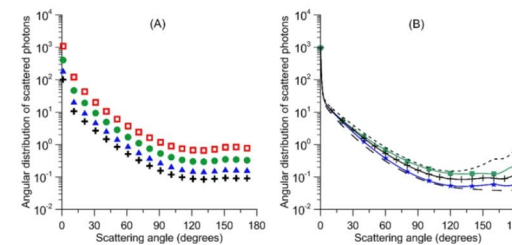


Sections

Figures

References

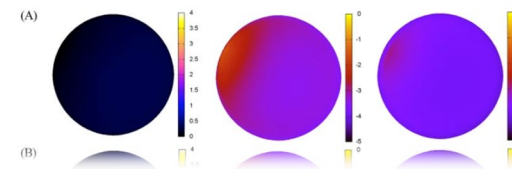
Figure 1



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Figure 2



Chuck Bueter

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When I heard the learn'd astronomer;
When the proofs, the figures, were ranged in columns before me;
When I was shown the charts and the diagrams, to add, divide, and measure them;
When I, sitting, heard the astronomer, where he lectured with much applause in the lecture room,
How soon, unaccountable, I became tired and sick;
Till rising and gliding out, I wander'd off by myself,
In the mystical moist night-air, and from time to time,
Look'd up in perfect silence at the stars.

- Walt Whitman



South Bend Community School Corporation

NEW ELECTRIC BUSES COMING TO SBCSC



30,000 LESS

That's how many gallons of diesel emissions will be saved by using these 100% zero-emissions buses



TWO

The number of electric buses being added to SBCSC's fleet



OVER \$822,000

That's how much AEP and the Volkswagen Settlement Plan gave to SBCSC through grants to fund this project



100 MILES

That's how far these local bus routes will travel



Air Quality Action Day Alerts

Receive alerts when the forecast is
“Unhealthy for Sensitive Groups”

Take Action:

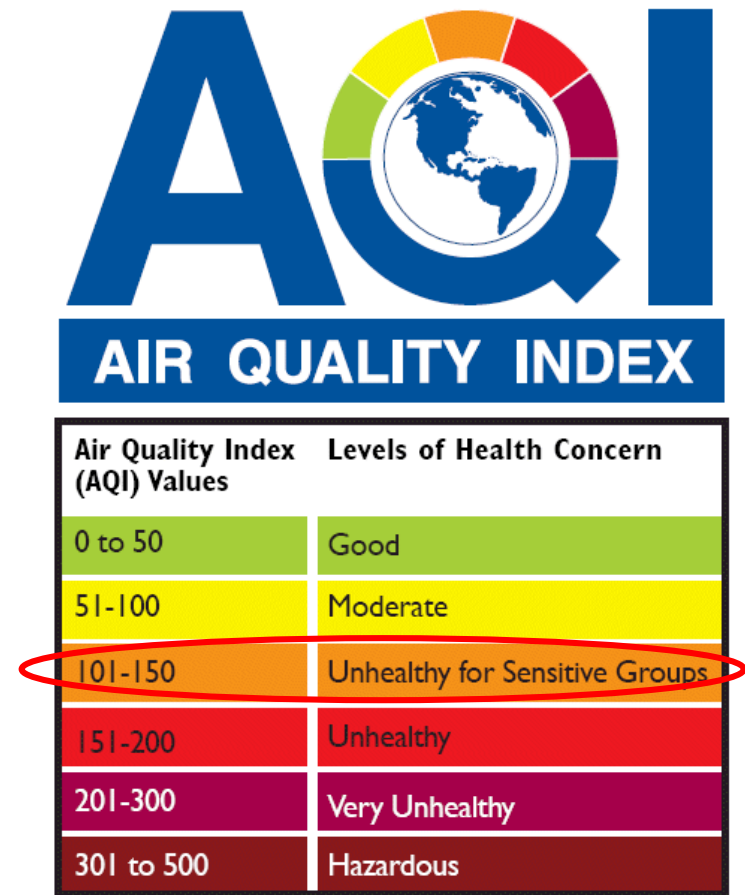
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