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PMB 44671
Beaverton, OR 97008

May 27, 2023

BY EMAIL

Victoria Mendez, City Attorney
Miami, Florida
law@miamigov.com

Re: LED Streetlight Hazards

Dear Victoria Mendez,

The Soft Lights Foundation advocates for the protection of the natural night resource and for the protection of citizens from the harms of Light Emitting Diode visible radiation. We are writing to you now regarding the sensationalized May 26, 2023, CBS Miami news story about lighting at the Miami Riverwalk.¹

Miami city code ordinances are out of date and are not applicable to LED lighting products. For example, Sec. 35-288. - Continuous duty to maintain adequate lighting for parking lots states, *“Open parking lots and access thereto shall be provided with a maintained minimum of 1.0 foot-candle on the parking surface from dusk until dawn.”*² The metric “foot-candle” cannot be used for LED lighting because LEDs are not point sources. The required metric for LEDs is “luminance”. Furthermore, LEDs do not provide uniform illumination, and thus any code requirement for LED lighting would need to specify “peak luminance” maximums.

LED lighting is a known human health hazard and a hazard to the environment. Because LEDs are not point sources, and instead emit light from a flat surface, the emitted light is exceedingly dense in the middle, falling off in intensity in a mathematical Lambertian shape.³ In addition, the dispersion of LED light does not follow an inverse square law, making the intensity nearly equal at the source and at the destination. Thus, LEDs do not provide a safe type of light.

LED products are regulated by the US Food and Drug Administration. However, the FDA has not vetted or approved any LED product to ensure the comfort, health, and safety of the public. LED visible radiation has been documented to cause seizures, migraines, panic attacks, and eye injury. Artificial light at night, especially blue wavelength light, has been documented to greatly increase the risk of

¹ <https://www.youtube.com/watch?v=RbeF92rKocl>

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https://library.municode.com/fl/miami/codes/code_of_ordinances?nodetid=PTIITHCO_CH35MOVETR_ARTVIIIIPRP_ALO_S35-288CODUMAADLIPALOMAPALOCCLCO

³ <https://www.led-professional.com/resources-1/articles/the-influence-of-led-emission-characteristics-on-the-efficiency-of-lighting-systems-by-osram-opto-semiconductor-1>

cancer, heart disease, obesity, mood disorders, and early mortality.⁴ LED visible radiation creates discriminatory barriers that prevent equal access. Because of the known hazards of LED visible radiation and due to the lack of FDA approval and performance standards, there is no legal justification for using LED lighting, despite the ubiquity of these lighting devices. Two petitions have been submitted to the FDA demanding that the FDA comply with the 1968 Radiation Control for Health and Safety Act to regulate LED visible radiation and non-ionizing radiation in general.^{5,6} Despite these petitions, the FDA has not acted. The use of LED visible radiation products creates a liability for the city and for businesses.

In the CBS Miami news story, a woman claims that she feels unsafe due to the poor lighting, and that a person was assaulted on the Riverwalk. The news story falsely equates the poor lighting with the assault. Research has shown repeatedly that artificial lighting increases the risk of property crimes, and that artificial lighting does not increase safety.⁷ We cannot over-light our way to safety. In addition, the adverse health impacts of artificial light far outweigh perceived, but unsubstantiated, safety concerns.

The Soft Lights Foundation recommends using Low Pressure Sodium, turtle friendly lighting, installed in 3-foot-tall bollards. LPS is a safe point-source light that can be regulated using foot-candles or lux. The amber color reduces harsh glare, keeps the contrast low, and provides adequate and safe lighting for navigation. The lack of blue wavelength light improves public health outcomes and provides a calming influence, versus the agitation and anger that are associated with blue wavelength light. LPS lighting does not require FDA approval. LPS is a highly energy-efficient lighting source.

Protecting the natural night as a resource is a critical function of city government. We urge Miami to reassess this entire outdoor lighting situation with the goal of protecting starlight, moonlight, and human and ecosystem health, and not allowing false myths about artificial lighting and safety drive decision making.

Sincerely,

/s/ Mark Baker

President

Soft Lights Foundation

mbaker@softlights.org

⁴ <http://www.softlights.org/human-health/>

⁵ <https://www.regulations.gov/document/FDA-2022-P-1151-0001>

⁶ https://www.americansforresponsibletech.org/_files/ugd/2cea04_e1e8715fdb41466caaf767e16c16522f.pdf

⁷ <http://www.softlights.org/crime-and-safety/>