

February 25, 2023

**BY EMAIL**

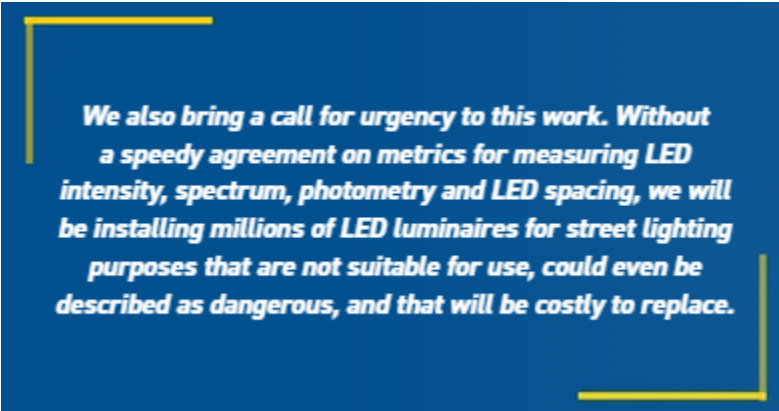
Inspector General  
Department of Transportation, California  
Ask.Investigations@dot.ca.gov

**Re: LED Streetlights Are Dangerous**

Dear Inspector General,

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 to alert your office to the fundamental safety and federal legal issues of LED street lights.

In December 2021, Cree Lighting published a white paper that alerts government officials to the fact that, *“None of the existing metrics [for LED street lighting] takes into account the non-uniform emitting surface of a LED luminaire.”*<sup>1</sup> Cree went on to say that LED streetlights are dangerous. Thus, the installation and operation of LED streetlights poses a liability for CalTrans.



*We also bring a call for urgency to this work. Without a speedy agreement on metrics for measuring LED intensity, spectrum, photometry and LED spacing, we will be installing millions of LED luminaires for street lighting purposes that are not suitable for use, could even be described as dangerous, and that will be costly to replace.*

In March 2022, the US Department of Energy signed a Memorandum of Understanding with the Illuminating Engineering Society to develop *“needed metrics and standards for solid-state lighting (SSL) technology.”*<sup>2</sup> The current IES standard for street lighting, IES RP-8-18, is not applicable to LED street

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<sup>1</sup> <https://online.flippingbook.com/view/702884488/>

<sup>2</sup> <https://www.energy.gov/eere/ssl/us-department-energy-and-illuminating-engineering-society-partner-advance-industry>

lights, and thus cannot be used by CalTrans to ensure safe, uniform illumination patterns for LED street lights.

LEDs emit an unnatural type of visible radiation with spatial, spectral, and temporal properties that are known to be hazardous to human health.<sup>3,4</sup> The Food and Drug Administration is the sole agency with regulatory authority for LED products. This authority was vested in the FDA by the 1968 Radiation Control for Health and Safety Act. No other federal agency has regulatory authority for LED products, including LED streetlights. The FDA has confirmed that they have this regulatory authority.<sup>5</sup> To date, the FDA has not published the necessary comfort, health, or safety standards for any LED product and has not vetted LED streetlights. Thus, CalTrans has no regulatory authority to install or operate LED streetlights, which creates a significant liability and economic risk for CalTrans due to the known hazards of LED visible radiation.

The Americans with Disabilities Act prohibits discrimination and requires equal access to public services. LED streetlights create discriminatory conditions for the class of individuals who cannot neurologically tolerate flat surface, directed energy LED visible radiation. LED street lights have been documented to trigger photosensitive seizures, debilitating migraines, anxiety, nausea, and numerous other adverse neurological reactions.<sup>6</sup> Because the FDA has not vetted LED streetlights and their impacts on the disability community, there are no existing federal guidelines or requirements that CalTrans can refer to. Since LED streetlights have been proven to be dangerous and discriminatory for certain individuals, CalTrans is required by the ADA to remove the barriers to access created by the LED streetlights. The undue burden and reasonable accommodation claim typically used by government agencies cannot be used in this situation because the installation of LED streetlights is a modification of an existing program, and this modification did not receive approval from the FDA.

In addition to the major legal obstacles discussed above, recent research proves that the switch to LED lighting has drastically increased light pollution due to the directed energy nature of the LED light source, and due to the use of high energy blue wavelength light.<sup>7</sup> Due to the rollout of LEDs, light pollution is now increasing at a rate of 10% per year, up from the previous 2% per year. Artificial light at night is a major contributor to risk of human diseases such as prostate cancer, breast cancer, mood disorders, and premature births.<sup>8</sup>

LED street lights were marketed as being energy efficient.<sup>9</sup> This is a false marketing claim, as LED street lights do not emit the same type of safe, uniform light emitted by High Pressure Sodium. A product may only be claimed to be energy efficient if it provides the same quality of service as the baseline comparison product. In this case, LED street lights produce a low-quality, hazardous visible radiation that is not the same quality as the light from HPS street lights. Due to the lack of FDA

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<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9420367/>

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7830240/>

<sup>5</sup> <https://content.govdelivery.com/accounts/USDHSCBP/bulletins/1a00f8a>

<sup>6</sup> <http://www.softlights.org/stories/>

<sup>7</sup> <https://www.science.org/doi/10.1126/science.abq7781>

<sup>8</sup> <http://www.softlights.org/human-health/>

<sup>9</sup> <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/roadway-lighting-env-fact-sheet-a11y.pdf>

regulation, lack of standards, and documented cases of harm and injury from LED street lights, we request that your office investigate.

To avoid additional expense and significant future liability, we urge CalTrans to turn off or eliminate the current LED streetlights until CalTrans receives federal regulatory approval from the FDA. The Soft Lights Foundation petitioned the FDA to regulate LED products on June 12, 2022, and this petition is currently under review.<sup>10</sup> Once the FDA publishes the necessary regulations for LED street lights, CalTrans will be able to install and operate street lights in a legal, safe, nondiscriminatory manner.

Sincerely,

/s/ Mark Baker

President

Soft Lights Foundation

[mbaker@softlights.org](mailto:mbaker@softlights.org)

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<sup>10</sup> <https://www.regulations.gov/document/FDA-2022-P-1151-0001>