

The Department of Urban Planning and Spatial Analysis at USC's Sol Price School of Public Policy was proud to sponsor their annual student essay competition on salient topics in urban planning and design. Both graduate and undergraduate students were eligible to participate. Essays were selected by a panel of professionals and academics. Below is this year's third-place entry.

## Is Los Angeles Outsmarting Itself with Smart Lighting?

Written by Soobin Kim

With approximately 220,000 streetlights illuminating 6,500 miles of streets, Los Angeles needed a smarter approach than the conversion to LED lights that started in 2009.<sup>1</sup> Good thing Mayor Garcetti recruited former tech company executive Peter Marx as Chief Innovation Technology Officer, because other cities across the nation now look to Los Angeles for innovative urban lighting solutions.<sup>2</sup>

*“A combination of policies, planning, and pilots are in need, driven by community-oriented discussions about how to support the health and safety of the city’s nights.”*

From a remote streetlight management system called *CityTouch* to *Smart Poles* that pay for themselves by also being cell towers, Los Angeles has come a long way since the very first gas lamp streetlights in 1867.<sup>3,4</sup> More cutting-edge technology is on the horizon as Ed Ebrahimian, Director of the Bureau of Street Lighting, announced plans to add sensors for gunshots or car crashes, as well as sensors that can detect earthquake tremors, measure humidity and assess air quality so that the city can easily collect data on an urban scale.<sup>5</sup>

As brilliant as these technologies sound, can they be too brilliant? With 220,000 streetlights burning all night, Los Angeles has lost its star-studded skies. Perhaps it's time to stop adding new features and think about how the City can maximize safety while minimizing artificiality. Los Angeles need not reinvent the wheel thanks to a Dutch company specializing in intelligent lighting. *Tvilight* developed attachable sensors that can read human activity and adjust the brightness based on demand.<sup>6</sup> These sensors are part of a real-time network so that occupants can be enveloped in a safe circle of light wherever they go.

Cities are more often thought of as just human settlements, but they're complex ecologies cohabited by other urban critters, like birds. Nights that have been robbed of darkness by LED bulbs can disorient and harm the internal compass of birds.<sup>7</sup> Consequently, not only do these winged neighbors chirp all night long, migratory birds also suffer from exhaustion in their journeys. Philips Lighting was sympathetic to the migrating birds that were attracted to the bright industrial shores of Ameland island and developed luminaires with a unique color spectrum that won't interfere with their trajectories.<sup>8</sup> They call it *ClearSky*, and this blue-green light proved to be lifesaving for birds, allowing them to fly over Ameland without making an unnecessary stop.

Although Los Angeles has become grounds for light overkill and unintentional bird slaughter, it's cutting costs with *Smart Poles*. Smart poles transform streetlights into valuable real estate that cell service providers can lease. This might sound like an innovative concept until the monstrosity unveils itself on a nearby street.



*Image courtesy of Soobin Kim*

There are plenty of reasons why the design is atrocious, including the amount of space it occupies on a narrow sidewalk and a platform for graffiti it can easily become, but on a more visceral level, it is just plain gut-wrenchingly ugly.

Streetlights are critical to how we imagine the city, so it is important to be mindful of how new technologies can alter cityscapes. A number of filmmakers in Los Angeles are already voicing concerns about how LED lighting has changed how the city is portrayed on film, to which other filmmakers have advised to make better use of post-production.<sup>9</sup> But no amount of post-production can fix Smart Poles wreaking havoc on the scenic views that are iconic to Los Angeles. Before shifting to tailoring Smart Pole designs to the aesthetic of each street, consider this: city lights don't have to exist on the top of a pole. Los Angeles should jettison this convention and find opportunities in architectural lighting or embedded lighting. *Downtown Design Guidelines* developed by the City provides good examples of how architectural and landscape lighting can reinforce the sense of place and support vibrant nightlife for pedestrians, while the City's Urban Design Studio is further researching options like bollards with lights that can replace the cobra head light fixtures sporadically intermixed with an array of historic lighting.<sup>10</sup>

Los Angeles has room to explore with its lighting, and as it does, some useful metrics to look at could be energy consumed by streetlights, rate of nighttime accidents, and level of brightness of the night sky. Successful city lights would drive all three down, returning nighttime Los Angeles into its natural state while fulfilling lighting's primary objective of providing safety. A combination of policies, planning, and pilots are in need, driven by community-oriented discussions about how to support the health and safety of the city's nights. Neighboring cities are already at work. The City of West Hollywood recently launched a Smart City Strategic Plan that included an initiative about upgrading the streetlight infrastructure to harness the capacity for IoT infrastructure, future pole attachments, and sound urban design.<sup>11</sup> Increasing the presence of multi-function streetlights is a multidisciplinary endeavor that will involve an ongoing dialogue with multiple working groups.

When it comes to urban lighting, brighter and bigger is not always better. Los Angeles has jumped on the smart city movement, but is it wise?

---

## Notes

<sup>1</sup> Maddox, T. (2016). How LA is now saving \$9M a year with LED streetlights and converting them into EV charging stations, TechRepublic. Retrieved from: <https://www.techrepublic.com/article/how-la-is-now-saving-9m-a-year-with-led-streetlights-and-converting-them-into-ev-charging-stations/>

<sup>2</sup> City News Service. (2014). Peter Marx is L.A.'s first official tech czar, Los Angeles Daily News. Retrieved from: <https://www.dailynews.com/2014/02/04/peter-marx-is-las-first-official-tech-czar/>

<sup>3</sup> Philips Lighting. (n.d.). Los Angeles is blazing the trail for connected street lighting. Retrieved from: <http://www.usa.lighting.philips.com/cases/cases/road-and-street/los-angeles>

<sup>4</sup> Bureau of Street Lighting. (2015). Smartpole. Retrieved from: <http://bsl.lacity.org/smartcity.html>

<sup>5</sup> Hamblen, M. (2017). Los Angeles tests gunshot sensors on lightpoles. Retrieved from: <https://www.computerworld.com/article/3180125/sustainable-it/los-angeles-tests-gunshot-sensors-on-light-poles.html>

<sup>6</sup> Tvilight. (n.d.). CitySense. Retrieved from: <https://www.tvilight.com/lighting-controls/>

<sup>7</sup> Thomas, A. (2018). City lights setting traps for migrating birds, Science Daily. Retrieved from: <https://www.sciencedaily.com/releases/2018/01/180119125817.htm>

<sup>8</sup> Philips Lighting. (2017). Dutch island adopts connected street lighting that is friendly to migrating bird. Retrieved from: <http://www.newsroom.lighting.philips.com/news/2017/20170323-dutch-island-adopts-connected-street-lighting-that-is-friendly-to-migrating-birds>

<sup>9</sup> Kendricken, D. (2014). Why Hollywood will never look the same again on film: LEDs hit the Streets of LA & NY, No Film School. Retrieved from: <https://nofilmschool.com/2014/02/why-hollywood-will-never-look-the-same-again-on-film-leds-in-la-ny>

<sup>10</sup> City of Los Angeles. (2009). Downtown Design Guide. Retrieved from: <http://www.urbandesignla.com/resources/docs/DowntownDesignGuide/lo/DowntownDesignGuide.pdf>

<sup>11</sup> City of West Hollywood. (2018). City of West Hollywood Smart City Strategic Plan. Retrieved from: <http://wehosmartcity.org/wp-content/uploads/2018/03/WeHoSmartCityStrategicPlan.pdf>

---

Soobin Kim received a B.S. in Urban Studies and Planning from the Department of Urban Planning and Spatial Analysis, Sol Price School of Public Policy, University of Southern California.

---

— *This post reflects the views of the author and not those of APA Los Angeles as an organization.* —