City Council member workshop march 13, 2024

Workshop Dark Skies

Thank you for allowing me to present information on the history of dark skies in Agoura Hills. My husband and I moved to Agoura in October 1981. Prior to city hood. The city was founded on the premise that we can do better than Los Angeles and establish better guidelines to keep the open space, horse keeping areas, and better development codes and sensible development, and not just be an extension of the San Fernando Valley. There was a fight in the early years by Mayor Fran Pavley to remove all the sightly billboards. We did it and it only improved the City of Agoura Hills.

My ex husband and I had an observatory in the backyard with a large working telescope. He took photographs of the horseshoe nebula and rings of Saturn and other star formations. The skies were dark enough in the early 1980's to appreciate the Milky Way. We presented as a Christmas gift photograph of the Horseshoe nebula and had a presentation of the photographs in City Hall.

At that time, my ex husband and I met with Jess Thomas and others from the Homeowners of Old Agoura to keep streetlights out of Old Agoura and to protect the dark skies. Protecting the dark skies is protecting open space just like cleaning up our waterways and purchasing open space for park lands and trails. Dark skies is not a novel idea. North of San Diego County and Tucson Arizona/Pima County in Arizona are dark sky localities.

Dark skies do not mean no lights! Bright lights and glare are light pollution. Critics of dark skies say crime will increase. This is not necessarily true. Tucson Arizona adopted an outdoor lighting ordinance in 1972 in an effort to provide standards so that night lighting did not interfere with nearby observatories but also to protect the wildlife areas. Tucson has a population of over ½ million people and is considered safer than 5% of the cities in the US. The yearly number of robberies reported was 771 as of February 2024. Minimizing wasted energy while not compromising the safety, security and well-being of persons engaged in outdoor night time activity. It was to control the obtrusive aspects of excessive and careless outdoor lighting usage while preserving, protecting and enhancing the nighttime use and enjoyment of any and all property.

What are the common light trespass solutions.

Pointing the light downward

Putting the light on a motion sensory or time a curfew.

Replacing it with a light fixture that is fully shielded, lower wattage (lumens), and reducing the height of the fixture.

What is an example of light trespass?

A neighbor that installs a new light fixture on their property. Unshielded and casts a bright light that spills onto your property and inside your homes.

I believe Los Angeles County has a law in place that lighting in residential areas should not spill over in a neighbor's property and trespass into the homes. This goes under the nuisance laws but can interfere with the ability of one to enjoy their home and after sleep and well-being. We have noise ordinances in Agoura Hills. I believe after 10:00PM.

March 13, 2024

RE: Dark Skies.

In watching one of the City Council meetings, the issues raised were: How do we enforce excessive lights especially at night. Also, I believe Debbie Klein Lopez said there were no complaints. This is not true. I complained to the city for months regarding my neighbors' lighting and interference with my well-being. For months bright lights were on all night. The lights were on all three levels of their home and also a bright light at their driveway entrance which was so bright that it trespassed into my son's bedroom. I took pictures at night, spoke to the neighbor, and brought this to the attention of the City. My other neighbors told me that it looked like an airport runway. The City finally approached the neighbor who denied any issues and eventually the bottom lights were dimmed and shielded. The neighbor was mad at me and my family. This should not have occurred in the first place. If there was an ordinance, the issue would not have occurred. If the city did not help me with this issue, I would have used the services of the Sherrif's department to handle this matter. This is not a good use of the Sherrif's department.

Our city is proud of the wildlife corridor and protecting the animals. Dark skies around the open spaces are a good start but we can do better by protecting our dark skies for not only us but our children. Hopefully we can codify a better lighting ordinance.

I have information that I can provide at a later date if the city council needs it.

Thank you.

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Tucson, Arizona, is lit by environmentally sensitive, modern lighting that saves energy.
Photo by Bettymaya Foott

LIGHTING

Can a lighting retrofit in a growing metropolitan city save energy, maintain safety standards, and protect the starry night sky?

NIGHTS OVER TUCSON:

How the Tucson, Arizona, LED Conversion Improved the Quality of the Night

Tucson, Arizona, is a major metropolitan city in the southwest United States. The city has a long-standing commitment to best lighting practices that protect the night. In fact, people who move to the area often remark on how bright the stars appear to shine. But as the city has grown, so has its light pollution. With major astronomical observatories within close range, city leaders enacted an outdoor lighting ordinance in 2012 that requires fully shielded lighting and sets limits on the total light produced at night, especially in natural areas and areas close to astronomy sites.

In 2016, Daryl Cole, the Director of Transportation for the city of Tucson, in consultation with IDA member, Christian Monrad, of Monrad Engineering, and Ameresco, a global energy management firm, developed a plan to convert nearly 20,000 street lights from high-pressure sodium to energy-efficient LEDs with adaptive controls. The plan projected savings of $180,000 per month in energy consumption and a sixty percent reduction in lumen output from street lighting.

The conversion plan was approved by

"The cost savings and the dimming capability – which also saves money on electical usage – should be enough for any jurisdiction to consider LED conversion with dimming." –Jessie Sanders, city of Tucson

the Tucson city council in February 2016 and completed in 2018. In total, 19,561 fixtures were replaced with 3,000K LED lights. To prolong the life of the lights and reduce lumen output, the lights are operated at ninety percent capacity from the hours of sunset until midnight. After midnight, most of the lights are further reduced to sixty percent of capacity until they are extinguished thirty minutes after sunrise.

The results of the conversion are encouraging. The city of Tucson is saving millions of dollars in annual energy costs. The total lumen output from street lighting was reduced from ~481 million to ~181 million lumens during the early nighttime hours. When the streetlights are dimmed to sixty percent after midnight, the total lumen output is further reduced to ~134 million, a seventy-two percent reduction.

City officials tell IDA that they have received few comments about the change in lighting. But the differences are meaningful to wildlife, the environment, and for night sky protection. The lower lumen output results in a reduction of blue light emissions of approximately thirty-four percent, which is an important factor in making the city safer for nocturnal wildlife. Recent measurements made by IDA indicate that total measured light emissions from the city of Tucson have been reduced by seven percent.

Best of all, the benefits realized by Tucson's lighting retrofit can be applied anywhere in the world. Tucson's project manager, Jessie Sanders, told IDA, "The cost savings and the dimming capability – which also saves money on electrical usage – should be enough for any jurisdiction to consider LED conversion with dimming."

Has your city recently undergone or considered a street lighting retrofit? We'd love to hear about your experience. Contact IDA at contact@darksky.org with the subject line: Lighting Where We Live.

THE TUCSON RETROFIT AT A GLANCE:

- **19,561 lights retrofit to 3,000K LED lighting with adaptive controls**
- **Lights operate at 90% power until midnight**
- **Lights are further dimmed to 60% between midnight and sunrise**

THE RESULTS

- **~$2.16M in annual energy savings**
- **Expected lifetime of luminaires extended from 8 to 25 years***
- **63% reduction of total lumens emitted by street lights**
- **Blue light emissions were reduced by ~34%**
- **7% reduction in total light emissions from the Tucson metro area**

**High-pressure sodium luminaire lifetime is approximately eight years. LEDs with the adaptive control measures implemented by the city of Tucson have an expected lifetime of twenty-five years.*

High-pressure sodium lights on the right were replaced with 3,000 Kelvin LED [illegible]