

From: Ruskin Hartley <ruskin@darksky.org>
Subject: Fwd: clarification from IDA on values-centered lighting policy
Date: April 12, 2021 at 1:14:41 PM MDT
To: lsfinn@icloud.com
Cc: john@darksky.org, pete@darksky.org

Dear Sam -

The following clarification was just sent to the Mayor, City Council, and Public Works director.

We sincerely hope that local dark sky advocates and others can be the primary point of contact to discuss this project.

With warm regards,

--Ruskin

----- Forwarded message -----

From: **Ruskin Hartley** <ruskin@darksky.org>
Date: Mon, Apr 12, 2021 at 12:08 PM
Subject: clarification from IDA on values-centered lighting policy
To: <amwebber@santafenm.gov>, <rdvillarreal@santafenm.gov>, <mjgarcia@santafenm.gov>, <cmrivera@santafenm.gov>, <rrabeyta@santafenm.gov>, <jcsanchez@santafenm.gov>, <jvcoppler@santafenm.gov>
Cc: <rawheeler@santafenm.gov>

Dear Mayor Weber and members of the City Council,

It has come to our attention that there is confusion regarding IDAs position with respect to the color temperature of outdoor lights and in particular street lights. I am happy to clarify this and refer you to our recently adopted position on [values-centered outdoor lighting](#).

First, we recognize that communities are best positioned to make decisions on lighting that works for them. We applaud the City of Santa Fe for pausing to engage in a community dialogue.

IDA's role is to offer guidance on how decisions impact light pollution and

recommend steps that can be taken to reduce light pollution if that is of value to the community. IDA's overarching goal is that where existing fixtures are replaced, the project should demonstrate how it will reduce light pollution.

Second, we recommend that most light installations use lamps rated at 2200K CCT or lower, PC-Amber, or filtered LEDs. This includes road and area lighting. There is overwhelming evidence that these colors have less impact on the environment. Fixtures are now available with good all-around performance that meet this recommendation.

Third, in addition to shielding, so no light is emitted above the horizon, we recommend municipalities light to the levels recommended by the relevant professional body, and no higher. In the case of the USA, IES is the ANSI body that established standards for roadways in RP-8-18.

RP-8 specifically addresses the spectral content of light in section 10.3.4 (Spectral Considerations). I have included the relevant extract below:

*As anticipated in RP-8-14, the U.S. Federal Highway Administration (FHWA) sponsored research by the Virginia Tech Transportation Institute to evaluate the effects of changing spectral content in overhead street and highway luminaires on driver performance. The Roadway Lighting Committee, after reviewing this research, concluded that varying spectral content of overhead luminaires **does not** affect driver performance as represented by detection of potential hazards.*

*...calculations for street and highway luminance and illuminance are to remain based on the photopic luminous efficiency function **without** adjustment for spectral content.*

(my emphasis).

In other words, current guidance from IES, the relevant ANSI body for roadway lighting, **does not recommend any particular spectrum**. The city can therefore choose a light source with a spectral content that minimizes light pollution and meets community aesthetic needs without compromising the consensus-based design standards of RP-8.

I understand some of the confusion lies in the following statement in the IDA policy:

Where higher than 2200K CCT is selected, the total emission of short wavelength emissions should be minimized through low intensity, careful targeting, and reduced operating time.

In other words, if a city selects a source with higher blue content (i.e. higher CCT), it should first be clear on why it is doing that. Then it should demonstrate how it is using the other factors to reduce light pollution. This should not be interpreted as support for higher CCT. It is recognition that a source with a little more blue content (i.e. CCT > 2200K), that is operated at a lower level for less time, may emit less overall blue content than a 2200K fixture that is operated at a higher level for more time.

We have also included a shortlist of cities that have deployed warmer temperature lights in the past few years. Please note this is not intended to be exhaustive.

- Southern Company, which owns Florida Power and Light and Georgia Power and Light, selected 3000L for the 1 million streetlights they operate. Previously they had installed some 4000K fixtures but were getting too many phone calls from irate homeowners due to glare concerns.
- Tucson, Arizona selected 3000K for skyglow mitigation - at the time lower CCT rated fixtures were not available at a reasonable price point.
- Phoenix, Arizona selected 2700K for glare moderation for the community.
- Washington DC is selecting 2700K and 3000K for glare moderation and to mitigate skyglow.
- The City of Los Angeles, California has changed its specification from 5000K/4000K to 3000K/2700K for the purpose of community aesthetics.
- Davis and dozens of other smaller cities in California have selected 2700K and 3000K for community aesthetics.

In closing, I will end with where the resolution starts. *Responsible outdoor lighting must consider all five principles in its design and installation and only through attention to all five principles will light pollution be minimized to its practical extent.*

Thank you for considering this clarification. We hope it is helpful as the City engages the local community in a decision that will shape the environment of Santa Fe for years to come.

With warm regards,

--Ruskin

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