PALOMAR OBSERVATORY
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January 10, 2017

Tyler Masters
Program Manager
WRCOG
Riverside, CA 4080 Lemon St, 92501-3609

Dear Tyler,

I am writing you today on behalf of Palomar Observatory to express our support for your initiative regarding the Riverside County Regional Streetlight Program that seeks to replace 63,000 streetlights in the County with full consideration of all stakeholders. Further I wanted to express our gratitude for including us in the discussions of this initiative: you and your team were very gracious to include the Observatory among the interested parties in this initiative.

Under your leadership, the assembled stellar team consisting of Riverside and Hemet staff, the engineering consulting of Christian Monrad, James Benya, and Jim Filanc, who are well versed in the issues concerning artificial night sky brightness, created and implemented a series of night street scenes and information packets that helped inform participants in your tour groups and produce relevant survey results. On three tours that I attended, I witnessed the professional manner which the tours were conducted. Your novel use of QR codes placed on demonstration light poles allowing the public to enter survey data with smartphones is truly innovative.

Palomar Observatory has been, and continues to be an internationally prominent astronomical observatory, producing world class science and cutting edge innovation in instrumentation and data processing. The Observatory is focused on discovery and follow-up as a matter of principle intent. Our 48 inch Samuel Oschin Schmidt Telescope with its wide-field capabilities surveys the sky, and interesting objects it finds are then analyzed in detail by the Hale 200 inch telescope, the largest in the world for the four decades after its construction. The Observatory is world renowned for the design and engineering of its construction, in the days before modern computer-based methods were available. Today the combination of Palomar Observatory, Caltech, JPL and other partners continues in the tradition of cutting edge research. In partnership with the US National Science Foundation we are developing a

state of the art 10 Million dollar camera system that will be able to obtain hundreds of images per night with a quality far exceeding historical photographic techniques. Modern data processing and machine learning methods will yield an unprecedented discovery rate, and the collected data harvested by an international science team. The Observatory also continues to equip the 200 inch Hale and 60 inch Oscar Mayer telescopes with modern instrumentation and from collaborations that make the highest use of these systems and resulting data. Included with this letter is a copy of a statement from the National Science Foundation outlining why Palomar Observatory continues to be a national strategic investment in the US science portfolio.

We believe our common interests in the control of Riverside County night sky brightness are well-aligned. Your leadership in Riverside County lighting strategy clearly serves public safety, nighttime environment, and environmental sustainability objectives for county residents. That these shared goals can also lead to reduced sky brightness for astronomy research and public enjoyment is a positive alignment of our interests. Riverside County residents will be able to take pride in being responsible stewards of the environment and in their partnership with the Observatory in exploring humankind's connection to our universe. Your effort to help others appreciate and balance needs of community with the impact of night lighting will allow the Observatory to continue producing world class science that will inspire generations to come and makes all involved, a member of the extended Palomar family.

We urge you to consider promoting using lights with the lowest blue content, color temperatures less than 3,000K, and the use of distributed controlled dimming to enhance public safety, reduce energy costs and extend the life of the LEDs. The ability to dim allows the use of condition dependent brightness programming to balance the needs of the County with the reduction of artificial night sky brightness and can aid law enforcement and public safety.

Sincerely,

Dan McKenna
Palomar Observatory Scientist