

November 17, 2014

Planning and Sustainability Commission
1900 SW 4th Ave, Suite 7100
Portland, OR 97201

RE: City of Portland 2035 Comprehensive Plan

Several years ago, in preparation of the development of the 2035 Comprehensive Plan, I met with eight or so City representatives from multiple bureaus to raise the issue of light pollution and to initiate a discussion on how the City might address it. Following that meeting I organized a light pollution symposium at OMSI attended by about 100 stakeholders, including City staff. Since that time, I have remained in contact with staff sharing the latest information and outreach tools. I remain committed to working with staff in pursuit of reducing, and ideally eliminating, light pollution. As a life-long amateur astronomer and a professional natural resources manager for almost 30 years, light pollution is a subject near and dear to my heart. I am not only an advocate of protecting the night sky for astronomical observation, but also for the welfare of wildlife and the conservation of energy resources. Thus I strongly commend the City for including a light pollution policy in the Plan Update. Implementation of such a policy is entirely consistent with the City's climate change, natural habitat, health and safety, and economic prosperity policies.

I co-authored a comment letter on the Plan Update on behalf of the Board of Directors of the Rose City Astronomers (RCA). My comments herein emphasize the two major points of that letter, namely: (1) a comprehensive consideration of lighting design and practices beyond energy efficiency is needed; (2) that a new goal be included to strive towards a "Dark Sky Community" status, per the criteria of the International Dark Sky Association (IDA).

Comprehensive Lighting Design

Given that we are at a time when street lighting is being retrofitted with blue LED lights, it's imperative that the City provide uniform lighting standards that not only consider energy conservation when considering lighting design, but also the other harmful effects of lighting. The light wavelength of a fixture is an important consideration when addressing light pollution. For example, many light bulbs emit a "blue wavelength" of light that is beneficial to humans during the day, but not at night.¹ Associated with this type of lighting is a suite of known and likely detrimental effects to the ecosystem, to the enjoyment of the night sky, to astronomical research, and possibly to human health. As RCA's liaison for the IDA, I hear many complaints from club members living in Portland and its surrounding suburbs regarding the increased glare caused by new, blue, LED street lights. The City of Davis in California embarked on such a lighting retrofit and after hearing many complaints it has taken a step back and is engaging each neighborhood in the decision of light wavelength. In the end, this will save the City considerable time and money and best preserve natural resources.

New Goal: Dark Sky Community

I strongly encourage the City to consider including a new goal in the Plan Update of becoming a Dark Sky Community. Such a goal is not only consistent with other goals stated in the Plan Update, but it provides a rallying point towards achieving many of those goals. It also carries with it a positive image of Portland and the potential for further ecotourism. Such a goal could be stated as:

¹ "Blue light has a dark side." *Harvard Health Letter*, May 2012,
http://www.health.harvard.edu/newsletters/harvard_health_letter/2012/may/blue-light-has-a-dark-side/

RE: City of Portland 2035 Comprehensive Plan**New Goal. A Dark Sky Community**

Portland's wise use of outdoor lighting promotes public health and safety, reduces energy waste, preserves and protects wildlife and our cultural heritage of the night sky both within and beyond City borders.

A Dark Sky Community is defined by IDA as *a town, city, municipality, or other legally organized community that has shown exceptional dedication to the preservation of the night sky through the implementation and enforcement of quality lighting codes, dark sky education, and citizen support of dark skies*. There are currently eight such communities designated within the world, with six of them in the United States. Portland has the opportunity to be a leader among larger cities by seeking certification as a Dark Sky Community from the International Dark Sky Association. Through such a goal, we can demonstrate how a City can accomplish urban livability and sustainability goals – as well as preserve its cultural heritage of a dark sky. [see:<http://www.darksky.org/international-dark-sky-places/about-ids-places/communities>]

A Dark Sky Community does not actually have to be completely dark and such a notion is absurd given the lighting needs within a metropolitan area. The City must simply have the following in place to qualify as a Dark Sky Community:

- Light shielding requirements
- Lumen density limits
- Adaptive controls for future public lighting
- Broad public support for dark skies
- A night sky monitoring program

I have taught many after-school astronomy courses to grade-schoolers. The students know “theoretically” about the life and death of stars but they have little to no “experience” of stars. They don’t know the quality of life that is had when experiencing an outdoor dome of stars. The potential of this experience is becoming less and less. Children no longer have any thought of looking up. I also teach an after-school ecology class and those same children are well aware of how fast we are losing wildlife habitats and the need to be “green.” We do a great job as a city of conserving the land beneath our feet for the benefit of wildlife and for the innate human need to be amidst nature, but what are we doing to conserve that wonderful realm of nature needed by wildlife and by the imagination of human-kind that lies above us? I’m so proud to be a 19-year resident of an innovative, progressive City, and I trust that the Commission will consider the above recommendations and continue Portland’s long tradition of being bold in our visioning and being leaders in environmental stewardship.

Respectfully submitted,



Dawn J. Nilson
RCA Director, Dark Sky Preservation
RCA Liaison, International Dark Sky Association