



October 25, 2014

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

RE: City of Portland 2035 Comprehensive Plan

On behalf of the Rose City Astronomers - a non-profit member-organization of over 500 local citizens devoted to public outreach, education and enjoying the wonders of our Universe - our Board of Directors requests that you consider the following comments, recommendations, and revisions to the **2035 Comprehensive Plan Proposed Draft**.

1. We commend the City for including a light pollution policy in the Plan Update. We suggest the following revisions to **Policy 4.28.e**.

Light pollution. ~~Encourage~~ Require lighting design and encourage lighting practices that reduce the negative impacts of light pollution, including sky glow, glare, energy waste, impacts to public health and safety, disruption of ecosystems, and hazards to wildlife.

Only through an outdoor lighting ordinance or a building code that specifically addresses effective lighting design can light pollution be meaningfully addressed. While full cut-off lighting is one of the simplest and most effective ways to reduce light pollution, the light wavelength of a fixture is also 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. Therefore, it is important that the City require lighting design that not only considers energy cost, but that reduces adverse effects as listed above.

In addition to reducing Portland's light 'bubble' (currently visible over a hundred miles away), extensive credible medical research has linked light pollution to an increased risk of human sleep disorders, depression, anxiety, and even cancer.² In 2009, The American Medical Association went on record that excessive nighttime lighting has adverse health effects.³

2. We encourage the City of Portland to demonstrate that being a sustainable city means an awareness and concern for our environment not only on the ground, but overhead as well. To that end, we suggest that the following goal be added to the Plan Update:

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/

² Chepesiuk, Ron. "Missing the Dark: Health Effects of Light Pollution." *Environmental Health Perspectives*, Volume 117, Number 1, January 2009; Stralf, Kurt, Robert Baan, Yann Grosse, Beatrice Secretan, Fatima El Ghissassi, Veronique Bouvard, Andrea Altieri, Lamia Benbrahim-Talaa, Vincent Coglian. "Carcinogenicity of shift work, pain, and firefighting." *Lancet Oncology*, Volume 8, Issue 12, pp 1065-1066, 2007.

³ "Policy recognizing negative effects of excessive light at night." *American Medical Association* press release, June 19, 2012, <http://www.ama-assn.org/ama/pub/news/news/2012-06-19-ama-adopts-new-policies.page>

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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.

We have the opportunity to be a leader among similar-size metropolitan areas 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>]

There is no question that the original Comprehensive Plan of 1980 has shaped the design and character of the City of Portland we live in today – and that the updated vision for Portland in 2035 will be equally influenced by this Comprehensive Plan Update. We urge you to consider and implement the above recommendations, and set in motion a serious plan to reverse our community's contribution to light pollution.


And finally, please reflect on this observation by Don Pettit, a NASA astronaut raised in Silverton, Oregon (where he could see Portland's light bubble) and a graduate of Oregon State University:

There was a time when smoke stacks showed how affluent your society was, but we look at these now almost with disdain. Lights or light pollution will probably fall in that same category, where now we equate the wealth of a society with how many lights you can burn at night-time. And in the future I predict that affluent societies will still be producing all the light that they need for night-time use, but not so much light that it bleeds into space and spoils our night-time sky.

Respectfully submitted,



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Rose City Astronomers



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