



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Written Testimony Presented Before the  
House Committee on Energy and Environmental Protection  
Tuesday, February 15, 2011 at 9:30 a.m.

by

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and

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### HB 1473 HD1 RELATING TO HIGHWAYS

Chair Morita, and members of the Committee. My name is Richard Wainscoat and I am here today to submit this testimony on behalf of the University of Hawai'i. The University of Hawai'i supports the intent of this bill to reduce glare and reduce light pollution, but believes that it should be strengthened by removing the option of partially shielded lighting and extended to include all roadway lighting.

Mauna Kea on the island of Hawai'i, and Haleakalā on the island of Maui, are two of the best astronomy sites in the world. Dark night skies are essential for these observatories to continue to operate. However, increasing urban lighting is threatening the dark night skies over these observatories. Light pollution extends well beyond county boundaries; lights from O'ahu have a major and growing impact on Haleakalā. Statewide legislation is needed to protect the observatories.

Full shielding of lights is one of the most important techniques for protecting astronomical observatories. Light emitted from partially shielded fixtures at small angles above the horizontal travels enormous distances through the atmosphere, and is a major contributor to light pollution — it increases sky glow at remote locations, making it difficult or impossible to see faint objects. Fully shielded light fixtures emit no light above the horizontal, and therefore have much less impact on remote locations.

Full shielding also reduces glare, which is a very important safety factor, particularly for older drivers, and greatly reduces the impact of nighttime lighting on endangered species.

The University recommends that care be taken to ensure that this bill does not weaken the existing state laws that require the state department of transportation to follow county lighting ordinances. County lighting ordinances in the Counties of Hawai'i and Maui already require full shielding of all roadway lighting. All highway lighting is already fully shielded on the island of Kaua'i because of the endangered birds.

The University recommends that the committee remove the option of partially shielded highway lighting. The state Department of Transportation is already using fully shielded lights on all new highway lighting, and the improvement in the quality of the lighting in the sections where fully shielded lighting is used is remarkable. The definition of “partially shielded” lighting in the bill allows an excessive amount of up light, which is higher than most typical partially shielded lights presently being used in Hawai‘i.