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# A BILL FOR AN ACT

RELATING TO LIGHT POLLUTION.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The legislature finds that the night sky is a  
2           tremendously valuable natural and cultural resource for the  
3           residents of Hawaii, and for visitors to Hawaii. The dark night  
4           sky has tremendous scientific value for astronomy, and is  
5           vitally important for endangered species in Hawaii including  
6           birds and turtles. Mauna Kea, on the island of Hawaii, is the  
7           best astronomical observatory site in the northern hemisphere,  
8           and arguably the best site on Earth. Haleakala on the island of  
9           Maui is also a world-class astronomical observatory site.

10           Unnecessary light pollution is threatening the dark night  
11           sky over the Hawaiian islands. This light pollution includes  
12           sky glow, energy waste, glare, light trespass, visual confusion,  
13           and environmental harm. Light can travel enormous distances  
14           through the Earth's atmosphere, and therefore does not respect  
15           county boundaries. Light pollution spreads across the entire  
16           State and must be addressed using statewide legislation.  
17           Furthermore, endangered species that are affected by light at  
18           night live on many of the Hawaiian islands.



1 Many of the problems with light pollution that Hawaii faces  
2 are caused by improperly shielded lights. Poorly shielded  
3 lights direct energy straight into the atmosphere, where it is  
4 wasted. This light produces sky glow, which limits residents'  
5 ability to see stars. For example, in Honolulu only about the  
6 brightest twenty stars are visible, whereas about two thousand  
7 stars can be seen from a dark location. Poorly shielded lights  
8 also cause glare, which diminishes a person's ability to see at  
9 night. Poorly shielded lights also enter locations where the  
10 light is unwanted (light trespass), including bedrooms, making  
11 it difficult for residents to sleep. Excessive light in the  
12 sleeping environment has recently been linked to an increased  
13 incidence of breast cancer. Improperly shielded lights on the  
14 island of Kauai have led to many bird deaths, particularly of  
15 the endangered Newell's shearwater.

16 Act 161, Session Laws of Hawaii 2009, formed a temporary  
17 advisory committee to assist the department of business,  
18 economic development, and tourism to develop a statewide  
19 starlight reserve strategy to preserve the quality of the night  
20 sky and its associated cultural, scientific, astronomical,  
21 natural, and landscape-related values. The temporary advisory  
22 committee recommended the enactment of certain measures in the



1 2011 regular session to conserve energy and promote responsible  
2 use of light.

3 The purpose of this Act is to implement the recommended  
4 legislation of the temporary advisory committee established  
5 pursuant to Act 161. It is not the intent of this Act to  
6 require the realignment or relocation of any existing light  
7 poles.

8 SECTION 2. Chapter 201, Hawaii Revised Statutes, is  
9 amended by adding a new section to be appropriately designated  
10 and to read as follows:

11 "§201- Starlight reserve strategy. (a) Beginning  
12 July 1, 2013, every new and replacement outdoor light fixture  
13 shall be fully shielded; provided that artificial light on  
14 shoreline and ocean waters shall be subject to section 205A-71.  
15 A light fixture is considered fully shielded when the light  
16 fixture is:

17 (1) Constructed so that no light is emitted above the  
18 horizontal plane; and  
19 (2) Installed in a manner that does not allow light to be  
20 directed above the horizontal plane.

21 (b) Lighting for outdoor athletic fields, courts, or  
22 tracks shall be fully shielded unless a registered electrical



1 engineer certifies that fully shielded lighting is impractical.

2 Where fully shielded fixtures are not used, acceptable

3 luminaries shall include those that are:

4 (1) Equipped with internal, external, or internal and  
5 external glare control louvers and are installed so as  
6 to limit direct up-light to less than five per cent of  
7 the total lumens exiting from the installed fixtures  
8 and minimize offsite light trespass; and

9 (2) Installed and maintained with minimum aiming angles of  
10 twenty-five degrees downward from the horizontal;  
11 provided that the aiming angle shall be measured from  
12 the axis of the luminaire maximum beam candlepower as  
13 certified by an independent testing agency.

14 (c) Replacement lighting for roadways and highways shall  
15 be fully shielded unless a registered electrical engineer  
16 certifies that fully shielded lighting with the existing pole  
17 spacing cannot achieve the lighting uniformity levels  
18 recommended by the Illuminating Engineering Society of North  
19 America. Where fully shielded fixtures are not used, acceptable  
20 luminaires shall be partially shielded lights that emit no more  
21 than five per cent of their light above the horizontal plane.



1        (d) The following lighting shall be exempt from this  
2 section:

3        (1) Light sources of three thousand lumens or less;  
4        (2) Emergency lighting used by police, firefighters,  
5        correctional personnel, or medical personnel for the  
6        duration of the emergency;

7        (3) Temporary outdoor lighting used for construction or  
8        major renovation of buildings or for highway  
9        improvements or construction;

10       (4) Temporary outdoor lighting used for night-time film  
11       production;

12       (5) Temporary outdoor lighting used for night-time  
13       agricultural operations; and

14       (6) Navigational lights that are required for waterways  
15       and aircraft.

16       (e) This section shall be considered to be supplemental to  
17 any county lighting ordinance and shall not be construed to  
18 supersede or modify county lighting ordinances or rules;  
19 provided that the ordinance is not less restrictive than this  
20 section."



1 SECTION 3. This Act does not affect rights and duties that  
2 matured, penalties that were incurred, and proceedings that were  
3 begun before its effective date.

4 SECTION 4. New statutory material is underscored.

5 SECTION 5. This Act shall take effect on July 1, 2011.



**Report Title:**

Outdoor Lighting; Starlight Reserve

**Description:**

Requires every new and replacement outdoor light fixtures to be fully shielded beginning on July 1, 2013, with certain exemptions. Specifies that replacement of existing roadway lighting may be partially shielded under certain conditions.  
(CD1)

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*

