
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 wildlife in Hawaii including birds and
6 turtles. Mauna Kea, on the island of Hawaii, is the best
7 astronomical observatory site in the northern hemisphere, and
8 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 2012 regular session to conserve energy and promote responsible
2 use of light.

3 The purpose of this Act (hereinafter to also be known as
4 the Hawaii Night Sky Protection Act) is to implement the
5 recommended legislation of the temporary advisory committee
6 established pursuant to Act 161. It is not the intent of this
7 Act to require the realignment or relocation of any existing
8 light poles.

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

12 **"§201- Night sky protection strategy. (a) Beginning**
13 July 1, 2013, all state agencies shall comply with shielded
14 lighting fixture requirements under this section, whereby every
15 new outdoor lamp light fixture emitting more than three thousand
16 lumens shall be required to be fully shielded and to have a
17 correlated color temperature of thirty-eight hundred Kelvin or
18 less; provided that the impact of artificial light on shoreline
19 and ocean waters shall be subject to compliance with section
20 205A-71. A lighting fixture is considered to be fully shielded
21 when the lighting fixture is shielded in such a manner that all
22 light rays emitted by the fixture, either directly from the



1 lamp, or indirectly from the fixture, are projected below a
2 horizontal plane running through the lowest point of the
3 fixture.

4 (b) No new mercury vapor lamps shall be sold or installed
5 after July 1, 2013.

6 (c) As applicable, retrofit work or replacement of
7 existing lighting fixtures shall:

8 (1) Limit the rated correlated color temperature of
9 emitted light (lamp, fixture, and filter if used) to
10 less than or equal to thirty-eight hundred Kelvin;

11 (2) Not be required for lamp-by-lamp replacement work; and

12 (3) Require one hundred per cent fully shielded lighting
13 fixtures be installed if more than fifty per cent of
14 existing nonconforming lighting fixtures need to be
15 replaced.

16 (d) Where fully shielded lighting fixtures are not used,
17 acceptable luminaries shall include light fixtures that are:

18 (1) Equipped with internal, external, or internal and
19 external glare control louvers and are installed so as
20 to limit direct up-light to less than five per cent of
21 the total lumens exiting from the installed fixtures
22 and minimize offsite light trespass; and



1 (2) Installed and maintained with minimum aiming angles of
2 twenty-five degrees downward from the horizontal;
3 provided that the aiming angle shall be measured from
4 the axis of the luminaire maximum beam candlepower, as
5 certified by an independent testing agency.

6 (e) Fully shielded replacement lighting fixtures for state
7 managed roadways and highways shall be installed on a case-by-
8 case basis, subject to the availability of capital improvement
9 project funding and compliance with applicable federal, state,
10 or county design standards or guidelines. Where fully shielded
11 fixtures are not used, acceptable luminaires shall be partially
12 shielded lights that emit no more than five per cent of their
13 light above the horizontal plane, as certified by an independent
14 testing agency.

15 (f) The use of existing nonconforming lighting fixtures
16 shall be allowed, subject to compliance with subsection (c)(3),
17 for:

18 (1) Lighting fixtures that are extinguished between the
19 hours of 11:00 p.m. and sunrise by an automatic
20 shutoff device; or
21 (2) Outdoor amphitheaters, ballparks, playfields, play
22 courts, or other similar recreational facilities,



1 whether public or private, that are used for
2 international, national, state, or county tournaments;
3 or as needed to conclude any recreational event,
4 sporting event, or other related clean up activity
5 that is in progress prior to 11:00 p.m. at the
6 amphitheater, ballpark, playfield, play court, or
7 similar recreational facility.

8 (g) The following light sources shall be exempt from this
9 section:

10 (1) Lighting sources emitting three thousand lumens or
11 less, which is comparable to a lighting fixture with
12 an incandescent lamp rated at one hundred fifty watts
13 or less, and temporary ornamental holiday lights;

14 (2) Emergency lighting used by military, national guard,
15 police, firefighters, correctional, medical, or
16 hazardous material mitigation personnel or other
17 emergency responders for the duration of the
18 emergency;

19 (3) Temporary outdoor lighting used for construction or
20 major renovation of buildings or for highway
21 improvements or construction;



- 1 (4) Temporary outdoor lighting used for night-time film
2 production and other night-time permitted activities
3 such as carnivals and concerts;
- 4 (5) Temporary outdoor lighting used for night-time
5 agricultural operations;
- 6 (6) Navigational lights that are required for waterway,
7 open ocean, and aircraft safety;
- 8 (7) Existing outdoor lighting fixtures that were legally
9 installed prior to July 1, 2013;
- 10 (8) Outdoor lighting fixtures that are necessary for
11 compliance with applicable federal, state, or county
12 design standards or guidelines that are related to
13 health and safety for the general public;
- 14 (9) Upwards facing lighting fixtures used to illuminate
15 buildings, monuments, statues, memorial structures,
16 national or state flags, and other selected facilities
17 or features that were legally installed prior to
18 July 1, 2013, or that will result in the generation of
19 three thousand lumens or less, as certified by an
20 independent testing agency; and
- 21 (10) Refurbishment, repair, or replacement-in-kind of
22 lighting fixtures that are character-defining features



1 of a historic property, as determined by the
2 department of land and natural resources historic
3 preservation division.

4 (h) This section shall be considered to be supplemental to
5 any adopted county lighting ordinances and shall not be
6 construed to supersede or modify county lighting ordinances or
7 rules; provided that the county ordinance is not less
8 restrictive than this section."

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

12 SECTION 4. New statutory material is underscored.

13 SECTION 5. This Act shall take effect on July 1, 2012.



Report Title:

Outdoor Lighting; Starlight Reserve

Description:

Requires every new and replacement outdoor light fixture to be fully shielded beginning 7/1/13, with certain exemptions. (SD1)

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

